

T H E

# Seaman's Guide and New Coaster's Companion.

I N T W O P A R T S.

PART I. COASTING DIRECTIONS from LONDON through all the different Channels of the River THAMES, both up and down, to the ORKNEYS and SHETLAND ISLANDS. The NORTH SEA, the CATTEGAT, the SOUND, the GULPH of FINLAND, the BRITISH and BRISTOL CHANNELS, including all the HARBOURS, with the COAST of WALES, and the ISLANDS of GUERNSEY, JERSEY, ALDERNEY, &c.

By JOHN CHANDLER, of ORFORD, PILOT, and late MASTER in the ROYAL NAVY.

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PART II. The Courses by the Compass, and Distances from Place to Place, for all the COASTS of EUROPE, and many of AFRICA and ASIA: With the Variation laid down as observed in the Year 1780. Also the Distances, in Miles, from LONDON to the principal Ports in GREAT-BRITAIN, IRELAND, the East Part of FRANCE, FLANDERS, HOLLAND, NORWAY, SWEDEN, DENMARK, throughout the BALTIC, and the MEDITERRANEAN.

By JOHN DISTON, PILOT, from the TRINITY-HOUSE.

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WITH THE ADDITION OF

An improved and corrected T I D E - T A B L E,

And an easy Method of finding the EPACT, the MOON'S AGE, and the DAY of NEW MOON.

Communicated by Mr. JOHN ADAMS.

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L O N D O N:

Printed for D. STEEL, Number 1, UNION-ROW, LITTLE TOWER-HILL. M.DCC.LXXXVIII.

PRICE TWO SHILLINGS AND SIXPENCE.



AT the Request of Mr. D. STEEL, I have revised this useful little Book, as far as I am able, and compared it with a piratical Compilation, published with *colourable* Alterations, obviously intended to hurt the Sale of this Work. If, in the Comparison, I had found any Thing worth Notice, I should (*lege talionis*) have seized it, for the many Depredations committed, by the Author alluded to, on

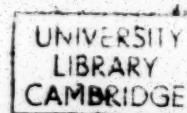
The Public's humble Servant,

EDMONTON, *January 1, 1788.*

J O H N A D A M S.

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# D I R E C T I O N S

FOR THE

RIVER THAMES, *through the* KNOB *and* QUEEN'S CHANNELS, *to the* DOWNS:  
*Likewise through the* SWIN, &c. *to* ORFORDNESS.

*Directions for the River Thames, from London to the Nore.*

## U P P E R P O O L.

**T**HE Upper Pool, from London-Bridge to Wapping-nefs, lies N. W. and S. E. about  $1\frac{1}{2}$  mile. If you are in the Upper Pool and bound down, with the wind easterly, it is best to begin at the first of the flood and warp down; but, if the wind be at S. W. wait till near high water, so that you may be down to Cuckold's-Point at the first of the ebb's coming away, to work or fall down through Limehouse-Reach, as may be most convenient.

**LOWER POOL.** The Lower Pool, from Wapping-nefs to Ratcliff-Cross, lies N. E. by E. and S. W. by W. There is a shelf off Pitcher's Point which must be avoided, by keeping over towards the ships on the North side: but it must be observed, that the tide of ebb sets very strongly upon the ships which lie in the lower part of the Pool. From Ratcliff-Cross down as low as the Horse-ferry you may moor upon the North shore.

**LIMEHOUSE REACH** lies N. N. E. and S. S. W. Upon the West side from Cuckold's Point runs off a mud-bank half river over towards Limehouse-Hole. From out of the Pool the ebb sets very strongly into the Hole; below which, a small distance from the East shore, lies the rock, which has not above 5 or 6 feet water upon it. In this reach is 10 or 11 feet at low-water. From the third southernmost mill and stone-wharf a hard shelf stretches out,

A

which makes the channel very narrow between the East shore and the ships at the Red-house. You may anchor and moor with the kedge a birth above Greenland Dock down as low as the moorings in 11 or 12 feet at low-water.

**GREENWICH REACH** lies in a semicircle from S. to E. and E. N. E. In this reach are two shelves; the upper one on the South shore, just below Deptford-Creek, and the other upon the North side. In going down, keep the clock-house, at Deptford-Yard, open of the Isle of Dogs till you open Blackwall-Reach. You may anchor at the Isle of Dogs, from below the house and upwards, in several births, in 14, 15, 16, or 18, feet water.

**BLACKWALL REACH** lies N. by E. and S. by W. From the Folly-House down to the upper part of Blackwall, you may anchor in 12, 13, or 14, feet water, upon the West shore; and, to the eastward, from the uppermost gibbet downwards, in 18 or 19 feet, at low-water. Just below the ship-yard lies Blackwall-Rock; then Limehouse-Church will be on the northernmost house in the yard

**BUGSBY'S REACH**, or Nell's-Hope, lies S. E. by S. and N. W. by N. On the North side lies a shelf, which begins at Bow-Creek, and runs down almost as low as the point. You may anchor in Bugby's-Hole upon the South shore, in 12 or 13 feet, at low-water.

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WOOLWICH



*Directions for the River Thames, from London to the Nore.*

**WOOLWICH REACH.** This reach lies E. by S. and W. by N. in which is not above 8 or 9 feet, at low-water. There is a shelf to the southward off the uppermost sand-wharf, Charlton-Church being then on with the wharf; and another on the North shore, beginning at Ham-Creek, and running down till you open the broad street, at Woolwich. You may anchor with the said street open, in 18 feet water, and in 15 or 16 feet upwards, and downwards as low as the point.

**GALLIONS** lie N. N. E. and S. S. W. The upper point is flat: give it a good birth; but, after you are below it, haul in towards the Devil's-House, till you get Woolwich-Church a sail's breadth on with the point; by keeping these marks you will avoid a shelf that lies near the lower point and runs nearly half river over; the best anchorage is with the sluice open, or a birth below it, in 17 or 18 feet water. You may anchor on the East shore above the shelf, abreast the upper point, in 12 or 14 feet, at low-water.

**BARKING REACH** lies N. E. by E. and S. W. by W. in the middle of which is a very bad shelf. To avoid it observe the following directions. Coming out of Gallions, after you have passed Maggot-nefs, run in for Tripcock trees and the Devil's House with the Nefs, before you bring Barking-Church on with the Powder-House; and, by keeping the Devil's-House shut, it will lead you between the shelf and the South shore; and, when you have the end of the Powder-House bridge open to the westward of the house, you are below it, and must go to the northward, to avoid the flat that lies off the point above the Halfway-House. You may also go to the northward by keeping the westernmost tree at the Devil's-House on with Maggot-nefs. From the lower part of Gallions, as low as Barking-Creek, lies a shoal of 5 or 6 feet water, and extends 1-third of the river over. There is good anchorage off Tripcock trees, in 12 or 13 feet water.

**HALFWAY REACH** lies E. S. E. and W. N. W. There is a shelf on the North side, just below the Breach-House. To avoid it, keep to the southward or mid-channel. There is another on the South side, just below the Powder-House. This reach has good anchorage all through; but the best water is with Julian-tree nefs on with Cold-Harbour point, towards the North shore, in 18 or 19 feet, at low-water.

**ERITH REACH** lies N. N. W. and S. S. E. Going out of Halfway-Reach into this reach, be very careful to avoid Julian-tree-Sand, which lies off the Nefs more than half-river over. Keep Barking-Church within a sail's breadth of the point below the Breach-House, till you bring Rainham-Church on with the Ferry-House; then this mark will lead you down into Erith-Hole, and you will avoid the shelf that lies on the East side, which begins at the farm-house and runs down as low as Cold-Harbour Point and half-river over. You may anchor in Erith-Hole, the church bearing S. W. in 5 fathoms.

**THE RANDES** lie E. by N. and W. by S. The Rand-Sand lies in the middle of the reach, towards the upper-end. When you are in Erith-Hole, steer so far in the bight till you bring the uppermost chalk-wharf on with the point, and then along the South shore into Long-Reach.

**LONG REACH** lies N. E. and S. W. about 4 miles in length: at the upper-end of which, just above Dartford-Creek, lies Dartford-Sand; but, by keeping Dartford-Church open till you open the creek, you will avoid it. The tide out of the Rands sets strongly upon the chalk-wharfs at Purfleet, and inclines towards the East shore half-reach down, when it sets over towards Greenhithe. You may anchor in any part of this reach, in 6 or 7 fathoms water.

**ST. CLEMENT's, or Fidler's, Reach,** lies E. N. E. and W. S. W. There

*Directions for the River Thames, from London to the Nore.*

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There is a shelf on the South side, of 6 or 7 feet water, beginning half-reach down, and running as low down as Broadness-Point; but, if you keep Gray's town open of the Point, you will avoid it.

GRAY's REACH, or Northfleet-Hope, lies N. by W. and S. by E. There is a flat below Broad-ness, and opposite to it lies Black-Shelf. This shelf is very dangerous, being steep-to, and the tide, both ebb and flood, setting strongly upon it. This shelf begins at the creek below St. Clement's church and runs down to the house above Grays.

The leading-mark along side this shelf is, a small red-tiled house, or cot, on with W. Tilbury-Church. In going down this reach, towards the lower-end, you must make good allowance for the tide of ebb, which sets strongly in towards Bumboat-Hall, and upon the three uppermost chalk-wharfs, at Northfleet.

GRAVESEND REACH lies E. and W. In this reach is deep water and a rapid tide. Therefore, if you intend to anchor here, and there should be many ships, give your ship a good scope of cable at once, lest your anchor come home, and you get athwart-hawse. The ground, from Northfleet down as low as the town, is hard and bad for an anchor to take hold of. There is a shelf off the second bar-ways, downward, upon the North shore, and another off the New-Tavern, which runs a mile down upon the South shore. Another lies off the Coalhouse, at half a cable's length distance from the shore, the Coalhouse on with the E. end of E. Tilbury-Church. This shoal has not in the bight above 12 or 13 feet, at low-water.

THE HOPE lies N. E. and S. W. There are two shelves in this reach; both which lie on the N. W. side. The uppermost, called the Ovens, lies just below the Coalhouse Point. Keep Gravesend open of the Point till E. Tilbury Church bears W. by

N. and it will lead you clear of and below it: the lowermost is Mucking-Flat that lies in from the creek upwards.

SEA REACH. The course down Sea Reach is E. S. E. and S. E. by E. In coming out of the Hope the tide sets strong upon the North shore. The upper part of this reach is flat a long way off below the Hope Point, so that the best tide and deep water lie upon the Essex shore. Upon the South shore, opposite Hole Haven, lies the body of the Blyth Sand: the upper end lies with Pitsey Church on with the Lower Marsh House near Shell Haven, and the lower end with Pitsey Church on with the Scar Houses. The long mark to lead clear of it is, West Tilbury Church a fail's breadth open of the Hope Point, depth of water 5 fathoms.

Opposite the lower part of the Blyth lie the Scars. This bank begins at Hole Haven and runs down as low as the Scar Houses. They are steep-to 9 fathoms, and then a-ground. The Chapman lies below the Scars and is also steep-to. The thwart-mark for the Chapman-Head is Hadleigh Castle on with a white house upon the high land. In working down stand to the Blyth Sand into six or five fathoms, and to the Chapman and Scars in 10 deep water, 9 or 10 fathoms, then put about. But you will always see the edge of the tide, therefore tack before you come to it.

From Hole-Haven to the Nore the course is E. S. E. and S. E. by E. ten or eleven miles. Thwart off Leigh and the upper part of the middle down as low as South end is called Leigh-road, and is flat from side to side, as three and a half, 4, and 5, fathoms, at low-water.

In working down from Leigh-road to the Nore, you will find the middle ground, upon which, towards the upper end, is not above three fathoms water, and thwart the Nore,  $4\frac{1}{2}$ . Do not stand over the middle towards the upper end, as the channel to the northward



### *Directions from the Nore to the North Foreland.*

northward is very narrow. Stand to the Nore in 7 or 6 fathoms water, and to Shoeberry Knock, in 10 or 9 fathoms. Upon the Knock is a black buoy, the Nore Light bearing S. by E. The Nore Light lies with Minster-Church on with the easternmost part of a triangular field, by some called Mizen Hedge, and the Sheer Bulk just open of the garrison of Sheerness,

### *Directions from the Nore, through the Five-Fathom Channel and Narrows, to the North-Foreland.*

**T**HE black buoy of the Spile lies S. E. by E. 6 or 7 miles from the Nore Light, and Shottenden-Mill in a line with the houses upon Shell-ness. In running down from the Nore, steer S. E. by E. or bring the Nore Light a sail's breadth open of Yantland, till you come within a mile of the buoy of the Spile, or until Leisdon-Church comes open of the Land's-End of Sheppy, bearing S. by W. westerly; then steer S. E. by S. for the Five-Fathom Channel.

The white buoy, upon the East end of the Spaniard, lies with Minster Church on with Bradgate, bearing W.  $\frac{1}{2}$  S.

In working down from the Nore to the Spile black buoy, stand to the Cant to 8 or 7 fathoms water, and off to the Warp into 5 or 6. In the channel you will have 9, 10, and 11, fathoms.

The course through the Five-Fathom Channel is E. by S. about 4 four miles. In the entrance is about 18 feet, at low-water: and in the middle about 14 or 15 feet. Between the Spaniard and Red-sand lies a middle ground, upon the shoaliest part of which is not more than 5 or 6 feet water. On the East end of it, upon the Gilman, lies a red buoy, St. Nicholas's Church a sail's breadth open to the westward of the Reculvers; and it lies from the Spaniard buoy N. W. by N. about 2 miles. In working through the

Five-Fathom Channel, put about the first shoal-cast on either side; the flood setting strongly over the Spaniard toward the East Swale and the ebb the contrary. This channel, where narrowest, is little more than  $\frac{1}{2}$  a mile over, till you get below the red buoy of the Gilman, where it is  $1\frac{1}{2}$  mile broad, and from 18 to 12 feet at low water.

The buoy of the Spaniard, which is black, lies with St. Nicholas's Church a sail's breadth open to the eastward of the Reculvers, bearing S. S. E.  $\frac{3}{4}$  E. and Hickmay-tree, upon the Isle of Sheppy, bearing W. S. W. westerly.

The course from the buoy of the Spaniard to the white buoy of the Spell is S. E. and S. E. by S. (with a flood tide) between five and six miles. Depth of water 10, 12, and 14, feet, at low water. In working over, stand to the eastward till Minster Mill be on with the East end of St. Nicholas's Wood, and to the westward till St. Nicholas's Church comes near the East side of the Reculvers. But, if the water be so far fallen that you cannot go over the bank, you may anchor a-breast the buoy of the Spaniard in 3 fathoms or in  $3\frac{1}{4}$  fathoms, the buoy bearing S. W. a large mile distance.

The marks, to anchor in Horse-Shoe Hole, are, St. Peter's Church in the middle of Marsh-Bay, the Reculvers S. by W.  $\frac{1}{2}$  W. and the black buoy upon the Knowl on with the beacon upon the Pan-Sand. Here you will have 20 feet, at low water.

The course from the buoy of the Spaniard to the white buoy of the Spaniard is E. S. E. southerly, about 4 miles. Depth of water across the Flats, 10 or 12 feet. *See the Knob-Channel, page 6.*

The white buoy of the Spell lies in 9 or 10 feet at low water. The mark to run for it is, Cleave on with the Boathouse in the Gore; opposite to which lies the West black buoy of the Last, (between

*Directions from the Nore to the North Foreland.*

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(between which is the entrance of the narrows.) It lies in 2 fathoms at low water with a single tree to the westward of Bishopton on with a gap in the cliff, bearing S.W. by S. southerly.

The Last forms the South side of the Narrows; as the Spell, Woolpack, and Searn, do the North side.

In entering the Narrows, be careful you do not leave the white buoy of the Spell too far to the eastward; as, athwart from the two buoys, at about two cables lengths distance, lies a ledge of only 5 feet, at low water.

After you have entered, you will have deeper water,  $2\frac{1}{2}$  or 3 fathoms. The course, up between the Last and the Spell up to the Elbow-buoy, is E. The Elbow-buoy of the Last lies in 10 or 11 feet, and bears from the East-buoy N. W. by W.  $\frac{1}{2}$  W. Mount Pleasant on with Lower Hale-Grove and the West corner of the Reculver Church-Yard on with Waldershare Monument. These three buoys are black.

The red buoy of the Woolpack lies nearly opposite the Elbow-buoy. The leading-mark is, St. Peter's Church on with a swamp on the East cliff of Westgate Bay, or St. Peter's Church nearly on with the easternmost-house in a village called Galcings, bearing S. E. easterly.

Your course from these two buoys in mid-channel, between the East-buoy of the Last and the buoy of the Searn, is S. E. by E.  $\frac{1}{2}$  E. 1 mile.

The East black buoy of the Last lies in 2 fathoms water, Chislet Mill just open to the westward of the Reculvers.

The Searn buoy lies just to the westward of the Searn Swatch; the mark for which is Chislet Mill 2 sail's breadth to the eastward of the Reculvers, and St. Peter's Church on the West side of Westgate Bay. It lies in 9 or 10 feet, at low water. If this buoy should be gone, do not stand too far to the northward, in work-

ing down, as a deep swatch, of 3 and  $2\frac{1}{2}$  fathoms, runs in at the back of the Searn, near  $\frac{1}{2}$  a mile to the eastward.

The course from the Narrows to the Hook of Margate Sand is S. E. easterly; upon which is not above 6 feet water, here lies a white buoy, St. Peter's Church on with the East side of Westgate Bay, and Monkton-Beacon on with the West end of Lower Hale Grove. But, to run from the Narrows to Cliff-End, keep St. Peter's Church in the middle of Westgate Bay.

In working down, stand each way till St. Peter's Church come upon either side of the bay.

The best anchorage in the Gore is, St. Peter's Church midway between the house and barn in West-Gate-Bay, and Monkton Beacon in a line with Upper Hale Grove, in 5 or  $5\frac{1}{2}$  fathoms. In the Gore the tide runs 12 o'clock, but flows, upon the shore, only  $11\frac{1}{2}$ , full and change.

Cliff-End-Bank lies athwart of Cliff-End; upon the shoalest part of which is not above 9 or 10 feet. The leading-mark, to go the southward of this bank, is, to keep a small grove, which has the appearance of a barn, open to the southward of the Reculvers, between the bank and the main. At the upper end of the channel is  $3\frac{1}{2}$  or 4 fathoms; towards the lower end 7 or 8. When you have Birchington Church S. by W. you are below the bank. But, if you intend to go between the bank and Margate Sand, keep the small grove open to the northward of the Reculver steeple.

The best anchorage in West-Gate-Bay is, Margate Church on with Nailand-Point; and Minster-Mill upon the barn in Westgate-Bay, in 5 or 6 fathoms water.

The course from Cliff-End to Foreness is E.  $\frac{1}{2}$  S. 6 or 7 miles. In working down, stand to Margate Sand in 6 or 5 fathoms, and

in



*Directions from the Nore to the North Foreland.*

in shore to 5. The best anchorage in Margate Road is Nailan-Mill and Minster-Mill in one, in 6 or  $6\frac{1}{2}$  fathoms, the N. Foreland Light S. S. E. or S. S. E.  $\frac{1}{2}$  E. in 6 or 7 fathoms water.

The Mark to go clear of Longnose is, to keep Margate Church or Mill-sweeps man high above the land, or the mill that stands to the northward of Birchington just open of Ledge Point. Come no nearer than 6 or 7 fathoms. Longnose runs off N. E. half a mile from Foreness.

*Directions from the Nore through the Knob-Channel, over the Flats, and through the Queen's Channel to the North Foreland.*

**B**EING at the Nore and bound down between the Ooze-Edge and the Mouse, steer E. by S. and E. S. E. for the entrance of the Channel between these two sands, which is about 1 mile and a half broad. The Blacktail-beacon bears W. by N. from the black buoy of the Mouse, and Charlock-Trees open with the Land's-End of Sheppy, bearing S. S. W. Upon the E. end of the Ooze-Edge lies a red buoy, E. by S.  $\frac{1}{2}$  S. from the Nore Light and Shottenden-mill on with Shellness Point. The black buoy of the Mouse lies E. from the Nore. Between the two sands, in mid-channel, is 9 or 10 fathoms. The course down is E. by S.  $\frac{1}{2}$  S.

Upon the East end of the Ooze-Edge is laid a white buoy, the Reculvers bearing S. S. E.  $\frac{1}{2}$  E. and the red buoy of the Knob E. by S. about 2 miles distance. After you are past the white buoy of the Ooze-Edge, steer S. E. by E. between the red buoy of the Knob, and the black buoy upon the Shivering Sand towards the black buoy of the Girdler. Here you will have from

8 to 6 fathoms water. The buoy of the Knob lies from the Reculvers N. N. W. northerly, and N. N. E. from the beacon upon the Shivering Sand, N. N. E. 1 mile.

At the black buoy upon the Shivering-Sand the Reculvers bear S. S. E. and the houses at Shellness on with a tuft of trees bearing S. W. After you are past the black buoy of the Girdler, steer S. S. E. in which direction you will have from 5, to 4, 3, and  $2\frac{1}{2}$ , fathoms water upon the flats. The buoy of the Girdler, the buoy of the Spaniard, and Hickmay-tree, lie in a line, bearing W. N. W. westerly. The Reculvers bear South from the buoy of the Girdler, and a remarkable tree up the country just open of the house to the eastward of the church.

The white buoy of the Pan-Sand lies in 12 feet water, E. S. E. better than 4 miles from the Spaniard buoy, with the houses in East-Hearn bearing S. W.  $\frac{1}{2}$  W. and a remarkable tree inland between them. After you have past the buoy and are to the southward of it, you will deepen the water to  $2\frac{1}{2}$ , 3, and 4, fathoms in Pan-Sand-Hole. The best anchorage there is on the North side, the beacon bearing E. by N. about  $\frac{3}{4}$  of a mile and the buoy of the Knowl S. S. E. about 1 mile.

The Knowl is a very small sand of 10 or 11 feet water. Upon it lies a black buoy, which bears from the beacon upon the Pan-Sand S. S. W.  $\frac{3}{4}$  of a mile, and Minster-Mill on with Gore-End, bearing S. E.

The marks for the standing beacon upon the Pan-Sand are, Birchington Church S. S. E. southerly, the Reculvers S. by W.  $\frac{1}{2}$  W. and St. Peter's Church S. E. by S.

The course from the white buoy of the Pan Sand through between that sand and the buoy of the Knowl is E. S. E. and S. E. by E.  $2\frac{1}{2}$  miles. The Pan-Patch lies near a mile S. E. by E.  $\frac{1}{2}$  E.

*Directions from the North Foreland to the Downs.*

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$\frac{1}{2}$  E. from the standing beacon upon the Pan-Sand. Upon the Pan-Patch is a white buoy, Monkton beacon S.  $\frac{1}{4}$  E. on with Upper Hale Grove.

The course from the Pan Patch through between the Wedge and Tongue is E. by S. better than 4 miles. The Tongue lies on the North and the Wedge on the South side of the channel.

The black buoy of the Wedge lies on the North part of the sand, Monkton beacon on with Lower Hale Grove bearing S. by W.  $\frac{1}{2}$  W.

The white buoy upon the W. end of the Tongue has Birchington steeple on with Mount Pleasant, bearing S.  $\frac{3}{4}$  W. and St. Peter's Church on with Fort-Point, at Margate. The head of the East buoy is painted  $\frac{1}{2}$  black and  $\frac{1}{2}$  white. It lies with the pitch of the Foreland bearing S. S. E.  $\frac{1}{2}$  E.

The North Spit black buoy lies with Minster-Mill on with the barn in West-Gate-Bay, and Redding-Mill on with North Down.

Your course from the N. Spit black buoy to the E. buoy of Margate Sand is S. E. and S. E. by E. 5 or 6 miles. This buoy is black and lies in 4 fathoms water, Nailan-Mill and Minster-Mill in one, bearing S. W. St. Peter's Church on with North Down, bearing S. by W.  $\frac{1}{4}$  W. and the North Foreland Light S. by W.

From this buoy to a fair way off the Foreland the course is S. S. E. and S. by E. 5 miles.

In turning down the Queen's Channel from the Pan-Sand, you will have  $2\frac{1}{2}$ , 3, and 4, fathoms, to  $4\frac{1}{2}$  as low as the Pan-Patch white buoy. You may go on either side of the black buoy of the Knowl; but the most water is to the northward of it. Below the Pan-Patch you deepen the water to 5, 6, 7, 8, and 9, fathoms. The upper part of the Tongue is steep, 10 and 9 fa-

thoms near the sand. The upper part of the Wedge is also steep, having 9 fathoms a small distance from the sand; but, toward the lower end of each sand, you may stand to 6 fathoms; but as you come down toward the North Spit of Margate Sand, you must not stand to the southward into less than 10 or 9 fathoms, and to the northward in 8 or 7: here, in mid-channel, you will have 11, 12, and 14, fathoms water.

After you are below the black buoy of the North Spit about 1 mile, you may stand to Margate Sand in 5 or  $4\frac{1}{2}$  fathoms, and to the northward into 10 or 9 fathoms.

The first of the flood, near the East buoy, sets South; the middle S. W. the last of the flood N. N. W. and N. The first ebb N. N. E. the middle E. S. E. and the latter S. S. E.

*Directions from the North Foreland through the Gull-Stream into the Downs.*

OFF the North Foreland the first half flood upon the shore sets S. S. W. then it is slack water, after which it sets W. N. W. round the Foreland, and N. N. W. till  $\frac{1}{2}$  ebb. So that the ebb tide, out of Margate road, runs three hours to the eastward, before the tide of ebb runs to the southward through the Downs; for which reason, if your ship be in Margate Road with the wind at S. W. you must not make sail to beat and go round the Foreland till half ebb, when the tide will be going to the windward through the Gull-Stream.

Being off the North Foreland, steer S. by W. or S. S. W. from the North Brake Head. Your soundings irregular, 6, 5, and 4, fathoms; but when you deepen into  $6\frac{1}{2}$  or 7 you are open of



*Directions from the North Foreland to the Downs.*

of the Gull-Stream. Off Broad Stairs lies a knowl of  $2\frac{1}{2}$  fathoms, the North Foreland Light N. W. by N. and Broad Stairs Mill on with Crow-Hall bearing West.

The mark to go clear of the North Sand-Head is, St. Lawrence's Church a sail's breadth on with the North Cliff of Ramsgate, bearing N. W. by W.  $\frac{1}{2}$  W. St. Peter's Church on with Broad Stairs Pier, bearing N. W. and the North Foreland Light N. W.  $\frac{1}{2}$  W.

The red buoy upon the North Brake Head lies with St. Lawrence's Church on with the North Cliff of Ramsgate, bearing N. W. and the North Foreland Light N. by W.  $\frac{1}{2}$  W.

The marks to run through the Gull-Stream are, the South Foreland Light in the middle of Old Stairs Bay, which is the southernmost swamp upon the North Foreland, bearing S. W. or S. W.  $\frac{1}{2}$  W. In working in, turn the light-house from side to side of the swamp, or stand to the brake in 6 or 5 fathoms, and off into 10, the Burnt Head being steep-to, 11 or 12 fathoms water, upon which the ebb sets strongly. The Burnt-Head lies S. E. by S. from St. Lawrence's Church.

The black buoy upon the South Brake Head lies with Walderhare Monument on with Sandown Castle, bearing W. by S. and Ash Steeple a sail's breadth open to the southward of the southernmost Church in Sandwich, bearing W. N. W.  $\frac{1}{2}$  N.

The best anchorage in the Downs is, Deal Castle on with Upper Deal Mill, in 7 or 8 fathoms water, the South Foreland S. W. and S. W. by S. But the best road for small ships is in the Small Downs, about  $\frac{3}{4}$  of a mile distant from the shore, in 5 or 6 fathoms water. The Small Downs begin at Sandown Castle and extend up two miles or better towards Ramsgate.

*Directions for the North Side of the British Channel, from the Downs to Scilly.*

**I**F you are in the Downs and bound down Channel, in the summer-season, with the wind westerly, weigh at high-water, flake and work down round the Foreland, standing to the main in 8 or 7 fathoms water, and off to the Goodwin in 12. When you have the lights in one, then bearing W. by N. you are below the Goodwin-sand. After you are below Dover, do not stand too far over towards the French coast, for between the two lies the Ripraps, a sand which stretches N. E. and S. W. about 4 leagues in length. The N. E. end has the least water upon it, about 14 or 15 feet; then Dover-Castle bears N. N. W. 4 leagues, St. Margaret's church upon the Foreland on with the Great-light, and Calais-cliff E. by S. Keep the church mid-way between the lights, and it will carry you to the northward of the shoal.

In working down between Dover and Dungeness come no nearer the shore than 13 or 14 fathoms, for below Folkestone a ledge of rocks runs off having 12 fathoms close-to; and do not stand off any farther than 18, as 20 fathoms are close to the Ripraps, the S. W. end of which lies 3 leagues E. S. E. from Dungeness. You may anchor in Romney-bay, with a westerly wind, in 8 or 10 fathoms water, the Ness bearing S. W. by W. and W. S. W.

**DOVER ROAD.** In Dover-Road you may anchor from 8 to 16 fathoms, St. James's church, in the valley, bearing N. W.  $\frac{1}{2}$  N.

But, coming to an anchor under Dungeness, be very attentive to the time of the tide, as it flows here near 4 fathoms. But, between

## *Directions for the North Side of the British Channel.*

between this and Dover, if you intend to stop a tide, come-to in not less than 15 fathoms water, as all within that is foul ground.

You may go round the Pitch of Dungeness in 10, 11, or 12 fathoms, steep-to; but do not put too much dependence upon seeing the light, either up or down, as it is generally very bad.

If, in coming up Channel, you should have occasion to anchor under the Nefs, with a N. E. or E. N. E. wind, do not come-to in less than 11 or 12 fathoms water, nor bring the light-house to the southward of E. or E. by S. at farthest.

From Dungeness to Beachy-head the course is W. 9 leagues; and in a fair way there are 20 or 22 fathoms.

**RYE BAY.** In working down, after you have passed the Nefs, be careful how you stand into Rye-bay until you get down as low as Fairleigh, for the shore is flat a long way off, and without are several banks of 12 or 13 feet water. But when Fairleigh-church bears N. by E. or N. N. E. you may stand in 7 fathoms, within one mile of the shore; although, in going in, off Hastings, you will, from 14 or 15 fathoms, immediately have 8, 7, or 6, after which you will have 10 or 9 fathoms, and then gradual soundings. In moderate weather, you may stop a tide here; but it must be observed, that, between this and Dungeness, the North-Sea and Channel tides meet; therefore, more properly speaking, the ebb-tide, from the Nefs to the Downs, &c. sets to the eastward.

Off Pemsey there is a sand which lies from the town S. by W. and from Beachy-head, from E. to E. by N. 9 or 10 miles. This is an irregular sand, or rather overfall, which has only 13 or 14 feet water upon it. Come no nearer this part of the coast than 15 fathoms, or Beachy-Head bearing W.

There is or was, also, a shoal on which the Royal Sovereign grounded, in the year 1757, lying from Beachy Head E. by S.

7 or 8 miles, with the land of the Seven-Cliffs a small sail's breadth open of the Head, Pemsey-church N. N. W. and Fairleigh E. N. E. But, as I never saw, in a gale of wind, any breakers upon it, nor can procure any information of the existence of such a shoal, at present, it has most probably worn away. The bank was very small, and had but 16 feet water upon it.

It is also reported that there is a small shoal, about 2 leagues S. by E. from the Head, having but 3 fathoms water upon it.—That there are shoals off the Head I make no doubt, as I have been informed by fishermen, at East-Bourn and Seaford, that they have met with banks, of small extent, having no more than 6 or 5 fathoms, but they shift several miles, being only a loose sand, which, in fine weather, grows up, but, upon the first gale of wind, disperses, or the shoals, at least, have a sufficient depth of water over them.

**BEACHY HEAD.** You may anchor before the town, in East-Bourn bay, in 6, 7, or 8, fathoms water. Going round Beachy-Head, you may with safety stand to the shore in 12 or 10 fathoms water; but, with a southerly wind, stand not too far in, as both ebb and flood, between Beachy-Head and Seaford-Head, have a great inset. From the Head out to sea 2 or 3 leagues is a flat, with not above 18 fathoms water.

**SEAFORD-ROAD.** After you are below the Seven-Cliffs and Seaford-Head, you may stand to what water you please, towards the shore, as low as Shoreham or Little Hampton; and anchor any where upon the coast in 10 or 9 fathoms water. In Seaford-Road, anchor abreast the town, in 7 fathoms, then you will have 5 of the 7 cliffs open; but in 10 fathoms the middle of the westernmost cliff is open, and the Head will then bear S. E. by E. This is an exceeding good birth in an easterly or N. E. wind.

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THE



*Directions for the North Side of the British Channel.*

**THE OWERS.** The course from Beachy-Head to the Owers is W. by N. 13 leagues, and from thence to Dunnose W. N. W. 6 leagues. The East Borough Head lies to the N. eastward of the Owers; to avoid them, keep the road, or white way, upon St. Rook's-Hill, on with Pagham-Grove, or keep Chichester-church a ship's length open of Pagham-church, bearing N. by W. then the white way and the grove will be between the two churches. Here, if the wind should take you short, and you cannot get down to the Isle of Wight, you may stand into, and come to an anchor in, the Park, an exceeding good road for westerly or S.W. winds. Standing in round the East Borough-Head, you will have, without it, 18 fathoms to 15, 19, 10, 9, 7, and 6, gradual soundings, and may come to an anchor in  $3\frac{1}{2}$ , 4, 5, and 6, fathoms, distant from Selfey-Bill  $1\frac{1}{2}$  or two miles, clean ground, the Bill bearing from the N. W. by W. to W. by N.

**BOGNER ROCKS.** Four miles to the eastward of Selfey-Harbour lie Bogner-Rocks; they stretch off  $1\frac{1}{2}$  mile to the sea, and are dry at low-water. Come no nearer the shore than 4 fathoms, at low-water, and by keeping the whole of the high land of Dunnose open with Selfey-bill it will lead you without them. It flows here 15 feet upon spring and 10 upon neap tides, and the tide sets to the westward three hours before high-water, upon the shore.

**PARK TO SPITHEAD, &c.** If you are in the Park, and bound to the westward, to Spithead, or down Channel, you may go out through the Looe-Stream, which is a channel that runs between the Mixon (which dries) and the Puller, upon which is about 9 or 10 feet, at low-water. In the stream you will have 5, 6, and 7, fathoms; when you are in 10 fathoms water, you are to the westward of the Puller. Being in the Park, keep Pagham church on with the W. point of Selfey-Harbour, bearing

N. by E. till Culver-Cliff bears W. N. W. a little northerly, then Seme and Siminot, or the Cardinal's-Cap, (the highest downs upon the Wight,) will be just open to the southward of Culver-Cliffs, and will lead you through the Looe-Stream, which, at the westernmost part, is not a mile broad. When you are clear, you will have Chichester-church on with Medbury-house, (which is a farm-house standing near a small grove of trees,) bearing N. E. then steer N. W. or N. W. by W. for St. Helen's Road.

**OWERS TO SPITHEAD.** But, being without the Owers and bound into Spithead, keep Dunnose W. N. W. and come no nearer than 18 fathoms water, as they are steep-to. The flood sets from Dunnose directly over them, and the ebb the contrary; but you must observe that the last quarter-tide, both ebb and flood, sets in towards Spithead.

The easternmost part of these sands or rocks lies from the barn upon Selfey-Bill S. 6 miles: in a fair way Dunnose will bear W. N. W. and having brought Chichester-church bearing N. E. on with the aforesaid farm-house, then you steer in N. W. for St. Helen's, depth of water 9 or 10 fathoms.

There is a buoy in 7 fathoms water upon the outer part of Bembridge-ledge: the marks to go to the eastward of this ledge are, to keep Sand-down Castle open with Culver-Cliff till the sea-mark at St. Helen's comes open with the Point.

But if you are from the westward, and bound into St. Helen's or Spithead, coming in round Dunnose, keep St. Catharine's-Point open till you get sight of Sand-down Castle, by which you will avoid some foul ground that lies within Dunnose. In Sand-down Bay you may anchor in 7, 8, or 9, fathoms water; but it is most part rocky, and unfit for anchorage, except to stop a tide.

From Dunnose to Bembridge-ledge the course is E. N. E.  $\frac{1}{2}$  E. or

or E. by N. 7 or 8 miles.—After you are at Bembridge-ledge, the course up to the buoy of the Warner is N. by W.  $3\frac{1}{2}$  miles. Between these is St. Helen's Road, where you may anchor in 7, 8, or 9, fathoms water, the sea-mark upon Ashdown on with that at St. Helen's, bearing S. W. by W. and St. Helen's Point S. S. W.

**FROM THE WARNER TO SPITHEAD.** After you have passed St. Helen's-Point, the course is, as before observed, N. by W.  $3\frac{1}{2}$  miles, to the white buoy upon the Warner, which you leave on the larboard side; and from thence to Spithead through the Grounds the course is N. N. W. 3 miles farther: but in running up, with the wind in the S. W. quarter, be careful to keep the sea-mark upon Ashdown in sight above the trees. The depth of water up, in a fair way, is 9, 10, or 11, fathoms, within a mile of the Warner buoy, then 15, 17, and 18, fathoms, as high up as the buoys of No-Man's-Land and the Horse, which bear from each other E. by N. and W. by S. about  $\frac{3}{4}$  of a mile distance. With a scant wind and flood tide, you may go to the westward of the Warner in  $4\frac{1}{2}$  or 5 fathoms. Upon the Warner there are 17 or 18 feet, at low water.

**SPITHEAD.** In working into Spithead, stand towards the Horse and Dean to 10 or 9 fathoms water, but towards No-Man's-Land put about the first shoal-cast, lest the tide should set you upon the sand, which is steep-to. When you get the Great Chalk-Pit open at the Point of Portsmouth you are abreast of the buoy, and the said Pit on with South-Sea-Castle, you are abreast of the buoy of the Horse.

You may anchor at Spithead from 7 to 12 fathoms water. Below the buoy of Spithead there is a wreck, upon which is laid a red buoy, called the buoy of the Edgar. In coming into Spit-

head, you leave three black buoys upon the starboard side, and two white buoys upon the larboard.

**COWES ROAD.** Being at Spithead, and bound down to Cowes-Road or through the Needles, the course is N. W. by N. and N. W. about 8 miles, to Cowes. Leave the white buoy of Ryde-middle upon the larboard-side and steer right for Cowes-Point. Keep in West Cowes-Castle shut, and it will lead you to the southward of the Middle, upon which are laid two black buoys. In a fair way you will have 10 or 11 fathoms; but you may run down by the lead upon the edge of the Motherbank in 7 or 8 fathoms water, giving East Cowes-Point a good birth, and anchor in the road before the harbour in 7, 8, 9, or 10, fathoms.

Between Cowes and Calshot-Castle lies the Bramble, which has two buoys upon it. The body lies S. S. E. two miles from the castle. Come no nearer it than 8 fathoms water.

**YARMOUTH ROADS.** Going to the westward out of Cowes-Road, the course to Yarmouth-Roads is W. or W. by N. 9 miles. The shore is quite clean upon the Wight side; but from the main one-third channel over is a flat that is dry at  $\frac{1}{2}$  tide. You may stand to the island in 8 fathoms and to the flats in 6 or 7, till you get down as low as Jack in the Basket, which is a beacon that stands on the S. W. side of the entrance into Lymington-Creek; after which the N. W. side is steep-to down into Hurst-Camber. In the channel is 9, 10, or 11, fathoms. In South Yarmouth-Roads you may anchor in 7 or 8 fathoms, just above the castle, where there is an easy tide and good ground.

Being past Yarmouth-Roads and bound out of the Needles, you will have very deep water, 15 to 20, 25, 30, 35, fathoms, abreast Hurst-Castle. Here there is a rapid tide, the ebb setting upon the Shingles and the flood upon the Warden-Rock. In go-



*Directions for the North Side of the British Channel.*

ing out, after passing the deep water off Hurst-Castle, you will have 10, 9, 7, 6, 5, and abreast of the Needles (where it is shoalest)  $4\frac{1}{2}$  fathoms. The course out is W. S. W. but, with an ebb tide, you must steer farther to the southward, and, with a flood, steer W. by S. to the Needles, 4 miles, observing to avoid the Warden-Ledge, which runs off from the island. You are abreast of this ledge when the flag-staff at the castle is in one with the cupola, and keeping the mill sweeps, which stand upon the Isle of Wight, above the land, will lead you clear without it. In working down, stand to the Shingles in 6 or 7 fathoms, and towards the island till you shoal your water. The last quarter flood sets directly out in the best of the water. Having passed the Needles, you will soon fall into deep water, as 12, 13, and 14, fathoms.

There is also a channel for small vessels through between the Shingles and Hurst-Beach, in which are 6 or 5 fathoms, but it is narrow. Keep Sconce-Point and Hurst-Castle touching, and it will carry you to the northward of the Shingles.

NEEDLES TO DURLSTON-HEAD. The course from the Needles to Durlston-Head is W. 6 leagues; but from the Needles to Handfast-Point, at the South side of Stud-Land-Bay, the course is W. N. W. 13 or 14 miles. In working down to Pool-Bar, when you are below Christ-church-Head, you may stand close to the shore in 7 or 6 fathoms water: but from Christ-church-Head a ledge runs off 2 or 3 miles, towards the Needles, which has not above 17 or 18 feet water.

STUDLAND BAY. Studland-Bay is an exceeding good road for small ships, with S. W. westerly, or N. W. winds. You may anchor in 4 or 5 fathoms, Handfast-Point S. by W. or S. S. W. Here are 9 hours outset and but 3 hours in. In going in or out of Studland-Bay, give Handfast-Point or Old Harry

a good birth, as a ledge of rocks runs off from it near  $\frac{1}{2}$  a mile to the eastward.

SWANAGE BAY. You may also anchor in Swanage-Bay, (but it is extremely bad holding-ground,) in 7 or 6 fathoms, Peveril-ledge (the outer part of the rocks) S.

In running up from this without the Wight, be sure to keep the ship well to the southward, as the flood sets strong into the Needles and Fresh-Water-Bay.

From the Needles to Portland the course is W. by N. 35 leagues.

COURSE DOWN CHANNEL OFF THE OWERS. Being off the Owers and bound down Channel, steering W. by N. 8 or 9 leagues will carry you 2 or 3 leagues without the Wight; then W. by N.  $\frac{1}{2}$  N. 16 leagues, will bring you abreast of Portland; but to the Start W. 35 leagues. Off the high land of St. Alban's, in working, do not stand too far in, on account of a race, which runs very rapidly and breaks much, upon a flood tide and an easterly wind.

PORTLAND ROAD. If the wind be westerly, and you intend to anchor in Portland-Road, run in with Weeke-church a sail's breadth open to the westward of Weymouth-Castle, till the westernmost part of the high land of Portland comes on with Portland-Castle in 7 or 8 fathoms water, then you will have the East part of Portland S. by E. about one mile from you. Between this and the shore you may anchor in 6, 5, and 4, fathoms, water, near the castle.

THE SHAMBLES. In coming in from the westward, be careful to avoid the Race and the Shambles. The Shambles lie E. N. E. and W. S. W. near  $2\frac{1}{2}$  miles in length. The East end lies S. E. 4 miles from the northernmost stone pier upon Portland, and

and the lights W.  $\frac{1}{2}$  N. The West end bears from the lower light S. E. by E.  $\frac{1}{2}$  E.  $1\frac{1}{2}$  mile from the shore. As you run up without it, and open the land of Weymouth, you will observe a barn, and then you are abreast the shoalest part of it, where you will not have above 12 feet water; but after you open Weymouth-Castle, you may cross it in 4 fathoms water; and when you are so far to the eastward as to see Weeke-church, you are clear above the Shambles, and may steer in for the road, giving the land off Portland a birth of half a mile, and anchor as before directed. If it be night, and you cannot see these marks, you may haul into the road as soon as you bring the East part of the highland N. W.  $\frac{1}{2}$  N. from you; but with a westerly wind, you may run into the westward of the Shambles, between it and the Race. When you get the church upon Portland bearing N. N. W. on with, or rather open to, the westward of a large house, with a chimney at each end, that stands near the shore, keeping them thus till the easternmost part of Portland bears N. or N.  $\frac{1}{2}$  E. then you will be within the West end of the Shambles, and may run along the shore, at a mile or half a mile distant.

**THE RACE.** The Race is very dangerous, especially for small laden ships, as an exceeding high sea runs in it; but, with northerly winds, you may go between it and the Bill, giving the shore a birth of about half a mile. With these winds, the Race lies nearly one mile farther from the shore than with the wind to the southward.

Running up Channel, be careful you do not get so far imbayed that you cannot weather the land of Portland; for though so much has been said respecting the facility of extricating yourself from danger, in such case, by the ou-set of the tide, it has very often proved fatal, both by going on shore and foundering at anchor. Mistakes are also frequently made here, as well as in Fresh-Water-

Bay, &c. by relying upon traditionary courses, of 60 or 70 years descent, without making a proper allowance for the increasing variation of the compass.

The course from Portland to the Start is W. 18 leagues, and to the Berry-Head W. by N. 12 or 13 leagues.

**TOR BAY.** Tor-Bay is an exceeding good road for S. W. or westerly winds. You may run into the bay, and anchor from 7 to 10 feet water, the Berry-Head bearing S. by E. or S. The ground is remarkably strong and good, therefore you have not any cause of fear that your anchors should come home, if clear. You may bring the Berry-Head S. S. E. or S. E. by S. off Lymington-Pier, in 5 fathoms water.

**BERRY-HEAD TO THE START.** From the Berry-Head to the Start the course is S. W. by W. 6 leagues. To the north-eastward of the Start is Start-Bay, 4 or 5 mile in extent. You may anchor in the bay of a village called Start-Crois, in 6, 7, or 8, fathoms water, the Start bearing S. W. or S. W. by S. Just under the Start, to the northward, lies a sunken rock, about half a mile from the shore; and about two cables length from the outermost rock which appears off the Start is another.

But in running down Channel, you must observe that there is a shoal of no great extent, with only 18 or 19 feet water upon it. It lies about two miles from the Start, with the Praul and Start just touching. Keep the Praul open and you will go without it.

Upon this shoal her Majesty's ship *Lenox* grounded, in the year 1712. When she was upon it, there was a quarter less 4 under the head-rails, 5 fathoms under the gun-room port, and but 18 feet abreast the chest-tree. Whether this was a sand or rock I never could get information; but, if it was the latter, it consequently remains there yet, and is to be avoided.

From



From the Start to the Bolt-Tail the coast lies nearly N. W. by W. and S. E. by E. 8 miles distant.

From the Start to the Edystone the course is W. by N. 8 leagues, and from the Start to the Ram-Head N. W. and N. W. by N. 8 leagues.

*Directions for Plymouth-Sound, Hamoaze, and other Harbours, &c.*

PLYMOUTH SOUND.

**I**N going into Plymouth-Sound, leave the two black buoys of the Tinker and Shovel on the starboard-side, and two white buoys, that lie on the Knap and Panther, on the larboard. The leading-mark in is, Plymouth old steeple on with the white patch upon the Hoa, bearing N. E.  $\frac{1}{4}$  N. Sail in with these marks on till Mount Edgumbe-house appear in sight, then steer over to the eastward and come to an anchor in 6 or 7 fathoms water, with the withy hedge on, the Devil's-house (upon the block-house,) on with Drake's island, and the old church at Plymouth on with the West part of the citadel.

**CAUSAND BAY.** You may also anchor in Causand-Bay in 6 or 7 fathoms, Penlee-Point bearing S. W. or S. W.  $\frac{1}{2}$  S. a mile or a mile and a quarter, and the battery at Causand N. W. by N.

In coming from the westward, give Penlee-Point a birth of at least  $\frac{1}{4}$  of a mile, in 8 or 9 fathoms water, to avoid the foul ground which lies from it. You may go into the anchoring-birth in the Sound, to the westward of the Knap and Panther.

Or to the eastward of the Tinker and Shovel, leaving the Newstone a  $\frac{1}{4}$  of a mile to the eastward, hauling in for the Shagstone, till you open Mount-Batten a sail's breadth of the East shore of the

Sound, keeping these marks till you get above the Tinker, you may steer farther to the westward, and anchor as before.

The Tinker lies with the Shagstone in the open with Yalm-Mouth, and has not above 13 feet water upon it.

The Shovel lies with the old Church on with the Caverns under the Hoa, and Maker-church on with the lower part of the path which comes down to Reding-Point.

The Knap lies with the old Sugar-house just open to the eastward of the Citadel-Point, and the Bolt on with the Shagstone, or the Shagstone midway between the Newstone and main.

The marks for the Panther are, Mount-Wise open with Reding-Point, and the white patch upon the Hoa upon a large house which stands over the town of Plymouth, and in the road that leads to Tavistock.

**HAMOAZE.** But if you are bound into Hamoaze, keep the northernmost house in Causand open, till you bring the Limekilns, in Mill-Bay, on with the East point of the bay, or a large house in Stoke just on with the steeple, and then they will just touch the said East point, by which you will avoid the Island-ledge, and then these marks will bring you to the westward of the Winter-Rock, which lies with the Obelisk, at Passage-Point, on with Block-house-Point, and Reding-Point a sail's breadth open of Drake's-Island; it has only 12 feet at low-water upon it, and 5 fathoms between it and the island.

Another good mark for this channel is the stone hedge upon the Hoa (over the holes) in a line. After you are abreast of the Winter, haul round the island, keeping the Obelisk on with Blockhouse-Point till you are abreast of Mill-Bay, then run down into Bareing-Pool; but be careful to shun the Germain-Rock, by keeping the Devil's-house in sight; when you have the  
stone

stone hedge in a line you are abreast of it; it lies half a cable's length from the shore; but after you open Mount-Wife, you may stand into Crimble-Passage, in mid-channel, till Drake's-Island is shut with Blockhouse-Point, and Stoke-church is on with the West point of Stone-house-Pool, (called the old Gun-wharf;) or till South-Down is open with Passage-Point; by which you will avoid the Passage-Rock; then you may run into Hamoaze, keeping Drake's-Island touching with the Point, by which you will also avoid the Harbour-shoal of 16 feet, that lies on the North shore. But merchantmen generally anchor abreast of or below Milbrook-Creek.

With little winds, be careful to let your anchor go in time, if your ship will not steer in Bareing-Pool, as the tide (which is rapid) sets right upon Mount-Edgumbe, and you have 17 or 18 fathoms water.

CATWATER. But, if you are bound to the westward, Catwater is the better loose. You may run into the eastward of the Winter-Rock, leaving the triangular buoy of the Cobler upon your starboard side. This buoy lies upon the outermost extremity of a ledge of rocks which runs off about two cables length to the westward from Mount-Batten.

In the fair way is another rock, (the Mallard,) which has but 12 feet water upon it at low spring tides: it lies off the citadel; the old church-steeple just in sight above the land touching the West side of it, and a small red shed, at the rope-walk, at Cat-Down, or Cox-Side, on with the Citadel-Point, otherwise called Fisher's-Nose: but by keeping the old church hid behind the garrison you will avoid it. Giving Mount-Batten side a good birth, after you are entered into Catwater, you will avoid a middle ground of loose sand, upon which is about 14 or 16 feet. Avoid coming to an anchor upon it, for if your anchor should come

home, with a southerly or S. W. wind, it will never take hold again: and, having so little room, your ship must inevitably go on shore in Deadman's-Bay, which may probably prove fatal, as a great sea falls in with outerly winds.

For which reason, run up to the lower Lime-kiln on Cat-Down, or abreast the high-land upon it, where you may anchor and moor ship in security, having 5 or 6 fathoms, little tide, and being secured from all winds.

From the Ram-Head to the Edystone the course is S. W. by S. 10 miles. This rock is clean to on the West side, but from the East part runs off some foul ground half a mile from the Light-house.

From the Ram-Head to the Lizard the course is W. by S. or W.  $\frac{1}{2}$  S. 16 leagues: but from the Edystone to the Lizard is 14 leagues W.

There is also a rock, called the Hand-Deeps, lying from the Edystone N. by W. four miles distant, and from the Ram-Head W. by S. 10 miles. Mount-Batten a sail's breadth open with Penlee-Point and the southernmost part of Moor-End on with the Mew-Stone are the marks for it. Upon it are  $3\frac{1}{2}$  fathoms at low-water springs: but round it you will have 16 or 17 fathoms close to it.

FOY OR FOWEY HARBOUR. N. W.  $6\frac{1}{2}$  leagues from the Edystone, and E. N. E. 9 miles from the Deadman, lies the harbour of Foy, which is an extraordinary good harbour for ships of 16 or 18 feet water, there being not less than 18 feet at the entrance at low-water, and the tide rises here 17 or 18 feet. You may anchor before the town or run higher up, where you will have 4 fathoms at low water. In coming from the eastward the shore is clean, but from the westward, after you have past the Dead-

man,



man, you will see a large rock, called the Wind-Head, or Gull: leaving this rock to the northward, and keeping it within the point of the Deadman, will lead you to the South of the Connies which lie half a mile off from Pedmouth-Point, and dry the first quarter ebb: and are about two miles from the entrance into the harbour.

The entrance into Foy or Fowey lies between two high-lands. Upon the E. side are the ruins of St. Saviour's-chapel, and upon the W. shore is St. Catharine's-Castle. The entrance is about a cable's length over, and clear of any danger. You may, after you are in, anchor in 16 or 18 feet at low-water, off Polruan.

This is an excellent harbour for privateers, being seldom disturbed by his Majesty's ships, and is a much better out-let than Falmouth for cruisers and ships bound to the westward.

**FALMOUTH HARBOUR.** From the Deadman to St. Anthony's-Head, the E. side of Falmouth-Harbour, the course is W. S. W. Four leagues midway is a very high rock, one mile from the shore, called the Gray. In the entrance of Falmouth-Harbour lies a half-tide rock, upon which is a beacon, or perch; this rock lies nearer to the W. than to the E. shore, and abreast of Pendennis. You may go either to the eastward or westward of this rock, but upon the E. side is most water as well as most room.

Being past the rock, and intending to anchor in Carrick-Road, keep the Manacle-Point just open and shut with Pendennis, and Badoek-church on with the Strand, (the landing-place for boats,) in Falmouth, and St. Maw's-Castle E. by S. Here one anchor will lie in 4, 5, or 6, and the other in 18, fathoms. You may borrow upon the W. shore in 5 or 4 fathoms, mooring your ship N. E. and S. W. Above Carrick-Road, upon the E. side, is a broad flat of 6 or 7 feet, which runs half channel over, called **St.**

**Maw's-Bank**, and above that is **St. Jult's-Pool**: to go into which take a pilot.

You may, at half-tides, in a ship of 14 or 16 feet water, go into Falmouth-Haven, and anchor before the town in 16 or 17 feet at low-water: but this depth of water lies within a small circumference. Going in, upon the bar, which runs over from Tre-lusis, on the N. shore, towards Pendennis, there are not above 11 feet.

Bound out of Falmouth round the Lizard, after you get without St. Anthony's-Head, with an easterly wind and an ebb tide, you must steer S. S. by E. or S. S. E. to avoid the Manacles, which lie S. S. W. 6 miles from Pendennis-Castle, and three miles from shore. Some of these rocks are sunken, and lie without those which appear at high-water, and the ebb-tide from the Deadman sets directly upon them; but if you keep the roof of St. Kever's-church above the land, it will lead you to the eastward of them: this church has a small spire. After you have past the Manacles, steer S. S. W. till you have the Lizard W. or W. by N. then shape your course as you please.

Due S. from the Lizard,  $1\frac{1}{2}$  mile distant from the shore, lie several high rocks, called the Stags: they are steep-to, having 12 or 14 fathoms close to them; and, a mile farther to the southward, 20 or 25.

**MOUNT'S BAY.** The course from the Lizard to the Land's-End is N. W. by W. 8 leagues, and between these lies Mount's-Bay. The only road for a westerly wind is Gouver's-Lake, in which it is remarkable, that, with a S. E. wind there is an under-torrent, which heaves off shore, so that an anchor has never been known to drag or start; but, without you have some knowledge of the coast, it is not eligible, except in case of necessity. In running

ning from the westward, keep that shore on-board till you come abreast of Mouse-hole, and the small island of St. Clement's that lies before it. After you are past the island, steer N. E. or N. E. by E. and look out for the square tower of St. Paul's church, which stands upon the high land over the Mouse-hole, keeping so much of the tower above the land that you see the belfry windows; and, when you bring this steeple W. S. W.  $\frac{1}{2}$  W. it will be then on with a hedge, which runs in a strait line from the church towards the shore, and you will be abreast the Carron-bafe, upon which is but 4 feet at low water, and past the Loleigh, upon which is 5 feet. After you have opened the church to the northward of the hedge, steer N. W. by W. or W. N. W. and come to an anchor in 4 or 5 fathoms at low water, (observing the time of tide, for, it rises here 3 or  $3\frac{1}{2}$  fathoms in spring-tides;) then you will have St. Clement's island S. by W. or S. S. W. St. Paul's church S. W. or S. W. by W. and Penzance town N. N. E. or N. E. by E.

England's Keys lie S. S. W. more than 2 miles from Mount St. Michael, and E. S. E. southerly from St. Clement's islands 3 miles. They are sunken rocks, and lie one mile from the East-shore, having 6 or 8 feet water upon them.

The Wolf is a rock which appears at  $\frac{1}{2}$  tide, and is small and clean round, having 35 or 40 fathoms close to it; it lies W. N. W. from the Lizard 10 leagues, from the Land's End W. S. W. 14 miles, and with the Brezan-rock on with the outer part of the Longships.

The Rundlestone is another  $\frac{1}{2}$  tide rock, but of a larger extent, and lies S. S. W. 2 miles from the Land's End, between which and the rock is 20 fathoms water, and between the Wolf and the Rundlestone 40 and 45 fathoms. If you keep the church

of St. Levan, which stands upon the Land's End, intirely in sight, you will go without it; but, if you shut the church under the land, you go within it.

The Seven-stones bear from Cape Cornwall, W. by N. 7 leagues, and from St. Martin's Head, on Scilly, N. E. by E. 3 leagues; they lie N. W. and S. E. about 2 miles long and  $\frac{1}{2}$  a mile broad; they appear at low water, and generally break at high water.

The Longships and Brezan-rocks lie to the northward of the Land's End, about 2 miles distant from the shore, and are always very high above the water, the Brezan especially.

Between the Land's End and Seven-stones you will have 45 and 50 fathoms, as you will between the Seven-stones and Scilly.

Scilly lies W. N. W. 18 leagues from the Lizard.

Thompson's Rock is a sunken rock which lies two-thirds of the way between the Land's End and Scilly.

*Directions for sailing into the Scilly Islands, with an Account of the Tides, &c.*

**I**N coming from the southward, you will descry Scilly, in clear weather, 6 or 7 leagues off, and have 60 fathoms, grey sand with broken shells: it may be seen, also, on the South side, in 55 fathoms water, stony ground with some red shells. But, coming from the North, at 7 leagues distance, you will have sand and ooze mixed together.

There are four principal channels, or sounds, to go into Scilly, viz. St. Mary's Sound, Crow-Sound, Smith's Sound, and Broad-Sound, which are divided into N. W. and S. W. channels; there are, besides, the Old and New Grimby, St. Helen's Gap,

Tea-



'Teau-Sound, &c.

**ST. MARY'S SOUND AND ROAD.** St. Mary's Sound, which lies in W. N. W. between St. Mary's and St. Agnes' Island, is the safest channel, and St. Mary's Road the best, in the Scilly Islands. To go into this road, coming from the Eastward, you must run in to the southward of St. Mary's Island, steering for Penninis-Point (the south point) until you are within half a mile of it, or less; then steer for the Woolpack, keeping nearer to St. Mary's shore to avoid the Spanish Ledge, which lies about mid-channel, and has no more than 6 feet at low-water. The Woolpack shews itself before low water, and lies off that battery over which stands a large white rock. When a-breast of the Woolpack, to which you must give a birth of 2 cables length, stand right for the Steval Rock, which is bold-to, keeping the starboard shore pretty close on board, to avoid Bartholomew-Ledge; this has but 5 or 6 feet at low water, and lies S. S. W. about  $\frac{1}{2}$  a mile from the Steval. When a-breast of the Steval, steer away N. W. by N. At near half a mile you will meet Broad-Sound, and open the little Crow-Rock with Bantscarran-Point; then stand over N. N. E. for the road, till you bring the Nut-Rock N. W. or N. W. by W. of you, about 2 or 3 cables length distance; or, bring the castle S. S. E. and anchor; you will have clean holding-ground 5 or 6 fathoms at low water, and ride well for all winds but S. W. winds, which bring in a great sea.

Some ships, coming in from St. Mary's Sound, without a pilot, used to observe, to keep one third of the vanes of the mill in the garrison above land, as a mark to go clear of the Spanish and Bartholomew ledges, as well as the Woolpack: but, the vanes of this mill have been blown down long ago, notwithstanding the two houses or mills, much resembling dove-houses,

are yet remaining. It is farther to be observed, that there is a windmill built on Penninis-point, which is no mark for the sound.

In St. Mary's Sound the tide sets E. S. E.  $\frac{1}{4}$  southerly, and continues till two hours ebb; then it turns and sets in W. N. W. northerly.

**CROW-SOUND** lies at the North end of St. Mary's, and close by it is a bar-channel, having no more than 4 feet on the bar at low water. The tide here sets out S. E. at three-quarters flood, continues till three quarters ebb, and then runs back N. W. from the entrance of the sound to the bar, where you will meet with the tide, which sets into St. Mary's Road W. S. W. To enter into St. Mary's by Crow-Sound, steer in about W. N. W. till you come almost to a low point, called Sandy-bar; then keep Nut Rock (a round rock in the South part of Sampson) about W. by S. so you will go close by the Crow-Rock, leaving it on your starboard side. This rock is above water at half-tide, and between it and the shore are no more than 6 or 7 feet at low water. When a little past the Crow-Rock, steer over to the southward, to avoid running upon the Pots. Let Nut-Rock bear W. N. W. about 2 cables length from you, and then you may anchor in clean good holding-ground, where you will have 5 or 6 fathoms at low water, spring-tides.

N. B. This channel is dangerous, as well as

**SMITH'S SOUND**, which lies on the West part of St. Agnes; it is very narrow, and does not shew itself, but it is good, and has deep water. Coming from the southward, leave St. Agnes on the starboard side, and all the western scragged rocks and islands on the larboard, keeping the Castle-Bryer (a high round rock to the westward of Bryer) on with the Great Smith, another

another rock to the N. W. of St. Agnes; run in on that mark till near the said Smith, then steer over towards Annet, and give it a birth; afterwards steer away for St. Mary's Road. The tide sets out S. E. at 4 hours flood, and continues till 2 hours ebb, running pretty nigh the same all through the western necks and rocks, as far as the Bishop; but, to the northward of that, you will meet with the harbour-tide in

**BROAD-SOUND.** This sound becomes dangerous when ships are unacquainted with the setting of the tides. There are two passages leading into it, viz. the S. W. and N. W. channels. To go through the S. W. channel, which is the best of the two, sail in between the Bishop and the Crim, the two westernmost rocks of Scilly, which are pretty much above water, about 1 mile and  $\frac{1}{2}$  asunder, and about N. and S. from each other; then steer in N. E. by E. leaving the Gunner on the larboard hand, and keeping the Little Ganhilly (the nearest big rock to the S. E. of St. Martin's) open of Bantscarran, or the North part of St. Mary's, which mark will run you directly into the road.

But, if you should fall in with the Bishop and Clerks at low water, for about half an hour, and no more, the tide sets N. W. and, if you stand to the northward, the tide trims round till you leave all the islands on your starboard side; then you will have, about a mile from the shore, a true tide setting E. N. E. as on the other side of the islands away to the eastward. At the Bishop, at this half-hour's flood, you will have an E. N. E. stream all the way to St. Mary's Road, and also as far as St. Martin's Head; but then mind not to go too far to the southward among the necks; for, as the tide flows, it parts, turning away to the southward; and, if you run too far to the northward, it does the same: therefore, you are to take short trips to get out. But, if

the weather is so bad that you cannot carry sail, or if you find a contrary tide, then steer in S. E. by N. from the Bishop or Crim, and fear nothing. When you come to the length of a net-head, haul off N. E. for the road, to avoid a ledge of rocks called Old Wreck, if the ship is large and the water low; but, if the waters are high, do not fear it, for, there are 12 feet on it at low water.

To sail into the N. W. channel of Broad-Sound, keep the Light-House on St. Agnes a sail's breadth open to the westward of the Great Smith; run in on that mark till you are come within a mile of the rock, and then steer for St. Mary's Road.

The Nun-Deeps are a ledge of rocks which shew themselves just at low water, and lie from the Crim N. by E. about 1 mile and  $\frac{1}{2}$ . Should you sail in to the northward of the Crim, they are exceedingly dangerous, unless you are well acquainted with the N. W. channel; but this channel ought never to be attempted without having a good pilot on-board.

**NEW GRIMSBY.** New Grinzey, or New Grimsby, is an excellent harbour, only small and narrow. The entrance from the northward is between the islands of Tresco and Bryer. There are two rocks called Kettle and Kettle-Bottom just off the point of Tresco, which shew themselves always above water; sail in by them, keeping the starboard headland close on-board. You may anchor opposite the round peaked island, called Hangman's Island, within the harbour, close over to Bryer, in 5 fathoms. It is very narrow here, and you ought to moor, or, farther in, you may lie a-ground at low water.

In this harbour the tide runs as follows:—From the northward, at low water, it sets in an hour and a half, then sets out three hours, turns and sets in 4 hours and a half, till it is half-ebb; and then



*Directions from the Land's End to Bristol, and Part of the Coast of Wales.*

then it turns and runs out the other 3 hours till low water. But, between Samson and Bryer islands, the tide sets in 8 hours from the westward, from low water till 2 hours ebb, and then runs out to the westward till low water.

**OLD GRIMSBY, &c.** Old Grimsby, St. Helen's Gap, and Tean-Sound, are tolerably good anchorages, pretty safe, but narrow and intricate, and not to be used without a pilot. Old Grimsby and St. Helen's Pool are both good places for small coasting-vessels, or such as will lie a-ground; you will have 12 or 8 feet in old Grimsby, at low water, spring-tides. The entrance from the northward is deep; and, when your ship is in, you are all land-locked, and may go to sea with all winds. In these sounds the tide runs alike; at low water it sets in from the northward, running away S. E. 9 hours, until it is half-ebb by the shore; then it turns back for the other 3 hours, till low water.

**ST. MARTIN'S HEAD.** St. Martin's Head in the westernmost point of the islands, on which there is a land-mark, in the form of a steeple, 40 feet high. Between this island and those to the eastward of it there is a sound through which small vessels may come in; but few enter that way, being not acquainted with the marks, nor with the settings of the tides, which are as follow:

The tide, that comes in from Broad-Sound, sets through St. Mary's Road, and so runs out E. N. E. through the above sound. But, as soon as you open the sea to the northward of the headland, you will meet the tide, at 4 hours flood, coming round into the E. N. E. stream, and that makes the Race of Hingeg: it gets the victory, and sets away S. by W. as far as Mennawethen-Island, where, meeting with Crow-Sound tide, which sets out S. E. it makes a great race at spring-tides, and

both tides go off to the southward together.

It is high water, at all the islands of Scilly, at full and change, that is, E. N. E. and W. S. W. and it rises, at ordinary tides, 18 or 20 feet. With moderate weather, in and about the islands, it flows E. N. E. and at neap-tides, with a northerly wind, N. E. But, when it blows hard, or has done so, and the wind is out to the southward, it flows about an hour longer, while a northerly wind puts it as much back.

**THE POUL-BANK, &c.** lies five miles south-westward from Goreggan, and has 15 fathoms water. Its mark is St. Agnes' light-house on with the N. W. point of Millegan, through the middle of the Goreggan.

In the stream of Scilly, ten leagues to the windward, there is a small bank, on which are 30, 35, and 40, fathoms.

Another bank lies 20 or 22 leagues W. by N. and W. N. W. from Scilly. On this there are 50, 51, and 52, fathoms; and, between it and Scilly, 60 fathoms.

*Directions from the Land's End to Bristol, and Part of the Coast of Wales.*

**T**HE promontory, called the Land's End of England, is the W. part of the hundred of Penwith, in the county of Cornwall; it is in breadth about seven miles, and upon it are three points: the southernmost is called, in the Cornish language, Toll Pedon Penwith, or the great hole in the head of Penwith; for, there is a great cavern in the cliff, in which the sea, falling, makes a great roaring. N. N. W. a league from this, is another point, called the Land's End; W. from which, about a league, lies a ledge of rocks, called the Longships. These

These rocks lie N. W. by N. and S. E. by S. about two miles in length, always above water on a spring-tide. You may go very well betwixt them.

To the N. of the Land's End is a sandy bay, called Whitesand Bay, where you may come to an anchor in 12, 10, 8, 7, and 6, fathoms, in good ground. You may come in or go out to sea, to the Northward of the Longships, without danger.

The third point is called Cape Cornwall; it bears from the Land's End N. by E. about five miles. W. S. W. from this cape, and N. N. E. from the Longships, lie the Brezans, which are two small rocks, the northernmost part higher than the other. Between these and the said cape lies another, less, but always above water; you may sail within these without danger.

From Cape Cornwall to St. Ives, the coast lies N. E. by E. and E. N. E. five leagues. St. Ives lies upon the W. point of a great bay, which is about three miles broad. At the E. point of the bay is a little island, called Godrevy, and from it is a great ledge of rocks two miles N. W. off into the sea, many of which, at half-ebb, are above water; therefore, in sailing from Cape Cornwall to St. Ives, keep along the shore, and sail in due W. In going up this channel, you must keep a good offing, these rocks being very dangerous; for, betwixt the aforesaid island, at the E. point of the bay, and the rocks, it is in many places rocky and foul; but, in St. Ives Bay, there is, on both sides, good sandy ground, where you may anchor all over, and come as near the shore as you please.

At the W. entrance of the bay is the town, at the N. point of which is the head with a pier, where small ships and barks lie a-ground, secured from all winds; but great ships may anchor without in six or seven fathoms. At the bottom of this bay you will see an opening between two sandy points; on the W. point

stands a church, called Levart-church; you may run betwixt them at high water, where there is 10 or 12 feet; the westernmost point is the deepest. As soon as you are in, you will see a deep bay, or creek; steer due E. into that creek; you may secure your ship upon a smooth flat sand from a northerly wind, which makes a grown sea in the bay.

From St. Ives to Hartland-Point, the course is N. E. by N. half northerly, 23 leagues.

From St. Ives to Tregarnon-Point is N. E. 10 leagues; the point is a league to the westward of Padstow, and may be well known by four high rocks, which are called the Cow and Calf, or, by some, the South Rocks. These four rocks lie about a mile and a half directly W. from this point, in a quadrangular form; there is another rock lies nearer the shore to the S. E. from these. All along the shore, from St. Ives to this place, is full of bays and high cliffs, and in many places there are sand-hills, as in the shore on the East of St. Ives Bay, for some miles to the eastward of the great highland, called, in the Cornish dialect, Keon Barianack, or St. Agnes' Ball; off which lie two rocks, called the Man and his Man. Two leagues N. N. E. from these rocks is a point with another rocky island, which point is called Ketsey-Point, and the island Gull-Rock. Here you will see 4 points: the westernmost called as before; the second, Pentire-Point; the third, Pentire-Vean, or little Pentire Point; and the easternmost, Towan-Point. Betwixt the two Pentire-Points is a bay, or haven, called the Gunnel, fit only for small ships, which go in at high water, and lie safe a-ground upon the sand. To the E. of Towan-Point is a bay, which takes its name from this point, in which a ship may ride safe in 10, 12, or 8, fathoms, free from a S. or E. wind. About three leagues

N.



N. by E. from Towan-Point is the rock called the Cow and Calf, which we mentioned before, lying off to the westward of Trevoſe-Point, to the eastward of which is a bay, where ships may ride in seven or eight fathoms water. From Trevoſe-Point, two miles E. N. E. is the harbour of Padſtow: in the way lies a high rock, called Gull-Rock, and another, off the harbour's mouth, called New-Land or Black-Rock. Note, that all along the coast from Godrevy-Island, which is upon the E. point of St. Ives Bay, the coast is bold, and no danger but what shews itself.

The haven of Hadſtow is a barren haven, and the channel is very narrow; going in, you must keep the W. shore, which is bold. You will have three or four fathoms, or more, at high water; when you are a mile in, there is a cove, on the W. side, called the Harbour-Cove, where you may lie, safe from all winds, a-ſtoat at low water; but the haven is a mile higher on the W. shore; it is dry at low water, but good soft oozy ground. The tide rises here twenty-two feet. In going out of Padſtow-Harbour, you may, without any danger, ſail betwixt the island and the East point, called Pentire, to the E. of which lies another island and rock, called the Mold. You may ſail between it and the shore, if there be occasion, and come to an anchor in the bay. At the easternmost point of this bay is a fishing-cove, called Portqueen, where you may have a pilot to carry you into Hadſtow. Five miles to the eastward of Pentire-Point, and two miles from Portqueen, is the haven of Partifack, which lies about fourteen leagues N. E. from St. Ives. Here a vessel of two hundred tons may go in at high water, and run on-shore upon the ſand out of the rage of the ſea. It is a fishing-town, to which belong ſeveral vessels that trade to Bristol, Wales, and Ireland.

Hartland-Point lies 10 leagues N. by E. from Partifack, and

three or four leagues N. from it lies the island Lundy, which is a long island, lying N. by W. and S. by E. At the eastward of the island you may ride safely in westerly winds, in 14 or 15 fathoms; but on the W. side the ground is foul.

Four leagues to the eastward of Hartland-Point, and six leagues S. E. by E. from the S. end of Lundy, lies Bideford-Sound, or Bay of Barnſtable, which is a barred harbour, but with water enough for a ship of 300 tons at half-tide. To this harbour belongs a great number of good ships, trading to most parts of America and Europe. You have good anchoring without the bar, and, when within, a very good road off the town of Appledore, which is situated a little within on the starboard side. Here the harbour divides itself into two branches; the easternmost goes up to Barnſtable, the other to Bideford. A ship of three hundred tons, or more, may lie at the key. — Note, the tide rises twenty-three feet upon the ſprings.

From Barnſtable to the bar, or Bag-Point, is N. four miles, and from thence to Mort-Point is N. E. by E. four miles, and from Mort-Point to Ilfordcomb the course is E. four miles. In this haven there is, at low water, three or four fathoms. Before the haven is also a good road with eight or nine fathoms at half-flood.

About six leagues E. from Ilfordcomb is the pier of Minehead, where small vessels lie a-ground: it is a small fishing-town, where you may have a pilot to carry you to Bristol. About 15 leagues N. E.  $\frac{1}{2}$  N. off Ilfordcomb lie two little islands, about two miles N. and S. one from the other, called the Holms: the northernmost is called the Flat Holm, which is low, with a light-house upon it; the southernmost, the Steep Holm, which is a high round island.

In

In the fair way between Ilfordcomb and the Worm's Head you will have six fathoms, and from thence up the channel to the Holms there is 21, 18, 15, and 12, fathoms water; the nearer the Holms, the shoalier the water. When you come from the westward, within the island Lundy, then you may see the land on both sides of England and Wales.

The coast, from Hartland-Point to the Holms, is altogether clean; but the coast of Wales is almost as foul and shoally from the island Calby to Bristol, having many banks, sands, and riffs, lying off.

The Holms and the island Lundy bear W. by S. and E. by N. 22 leagues.

**DIRECTIONS FOR SAILING FROM LUNDY TO BRISTOL.** The island of Lundy lies in the fair way going up the Severn channel to Bristol, having a free and large passage on either side of it: that betwixt the island and the English shore being bold, and without any danger; but the other, towards the Welsh shore, is more difficult; for, this coast is very full of sands, so that it is adviseable not to keep above two or three leagues, at most, to the N. of Lundy, and pass betwixt the two islands called the Holms, observing the following directions:

**TO SAIL THROUGH BETWEEN THE HOLMS.** To sail through between the Holms, you must keep nearest to the Flat Holm, where it is deepest; with a large wind you may sail so near it, without danger, as to throw a stone on-shore. Within, or the E. ward of the Holms, from the E. land, lies a great shoal, with a long tail shooting towards the W. called the English Grounds, which, when coming from the W. ward, you must be careful to avoid. Therefore, keep the Flat Holm, when you are past it, S. W. or S. W. by W. from you, and continue that course till you have sailed about a league, and then bear away

E. and E. by N. towards Portshut-Point, in 14 or 15 fathoms water, and look out for a little island, which lies near the E. shore, that will then be almost thwart of you: upon it stand two mills; and above, upon the main, stands one. When the mill, that stands on the high land, is in a right line with the W. end of the aforesaid island, you are past the tail of the aforesaid shoals, called the English Grounds, which are flat, so that you may sail along by them, with your lead in three or four fathoms, as near as you will. When the mill, which stands on the high land, cometh between the aforesaid two mills, which stand upon the little island, then you are entirely past the English Grounds. The tide rises here seven or eight fathoms at full and change, so that you may then run boldly towards the English shore, and as close along by it as you please towards Portshut or Portshut-Point. From the Flat Holm to Portshut-Point, in the fair way, you will have 15, 12, 10, and 8, fathoms. You must be careful not to come too near the Welch shore, because it is very uneven, and full of banks that are steep, and which in many places are dry at low water. You must not, therefore, come nearer the coast than in 12 fathoms; for, in sailing towards it, you shall have at one cast ten fathoms, and, before you can recover the next, be a-ground. It is so all along from the Flat Holm until you come to Bristol. When you are at Portshut-Point, you may anchor in King-Road, which is between the point and the river of Bristol. You may anchor in good clay-ground, from 8 or 9 to 3 fathoms, as near the river as is convenient, when brought in by pilots.

You may thence also sail along by the coast up the river Severn, which is also, like the river of Bristol, a fair river to sail into. Those who go farther, either to Bristol or up the Severn, must take



take a pilot at King-Road.

**DIRECTIONS TO SAIL FROM KING-ROAD TO LUNDY.** To sail from King-Road to Lundy, you must go away from Portshut-Point W. and W. by S. until the Flat Holm bears S. W. from you, or until the three aforesaid mills appear at an equal distance one from the other, viz. that which stands on the high land in the midst between the other two; then steer directly for the Flat Holm, and keep very close along to the S. ward of it; when you are past, steer W. by S. and W. to the island of Lundy.

About three leagues to the N. ward of the Flat Holm lies the town of Cardiff, in Wales, being a tide-haven; and before it is a good road, where you may lie land-locked almost for all winds. To the E. ward and N. ward of it lie many banks and sands, which are dry at low water, so that they secure you from the N. E. to the S. E. To sail into this road, coming from the W. you must run in between the Flat Holm and the point of Cardiff, which lies to the S. ward of the haven; and, being come about the point, then steer to the N. ward up along by the shore into the road. About a mile W. by N. from the Flat Holm lie some sunken rocks, called the Wolves, of which you must be careful.

A little off the point of Cardiff, to the W. ward of it, lie two little islands: the easternmost, or that next the point, is called Scilly; the westernmost, Barry: betwixt Scilly and the Flat Holm lie the aforesaid rocks, called the Wolves, S. E. and S. E. by S. from the point. If you sail through Cardiff-Road when it is high water, you may sail over all the sands which go to water at half flood.

About five leagues W. from Cardiff-Point lies Nash-Point; to the W. ward of which the land falls away, first about N. W. to

Neath, afterwards S. W. and S. and S. E. and makes a great bay between Nash-Point and Wormshead, where there are very good roads for W. N.N.E. and E. winds. From the Nash-Point, within the sand, is a good channel, five or six fathoms water; the shore bears N. W. clear ground. Here you may ride in smooth water, when the wind is between the N. and E. From the Nash-Point to the Neath is five leagues, and from thence to Swansea (which, as well as Neath, is a haven for small barques) the course is W. by S. four miles. From Swansea to Mumble-Point is a league and a half S. W. by S. between which two places is a deep sandy bay, where you may ride safe from a W. and N. wind, in 3, 4, or 5, fathoms water. From Mumble-Point runs a small ledge of rocks, which, in going about this point, you must beware of. S. E. by E. four miles from this point, is a great flat sand, called the Seaweather, betwixt which and the point is deep water.

West from Nash-Point, a little from the shore, lies a great bank, called the Nash-Sand, which, within half a mile of Nash-Point, stretches W. N. W. 7 or 8 miles. Keep Barry-Island open without Nash-Point, and that carries you to the S. ward of Nash-Sand.

From Wormshead, likewise, lies off a sand, which is very steep, called Hellwick, about 4 leagues S. W. by W. into the sea. Coming from the E. ward, if you would ride in the bay between Nash-Point and Wormshead, run along close by the shore between the Nash-Point and the Nash-Sand. Likewise, when you come from the the W. ward, and are bound in there, fall in close along between the points of Wormshead and the Hellwick, the channel between them being a mile broad. Those that come out of the sea may sail between the aforesaid banks, or sands, for it is there wide and deep.

Wormshead

Wormshead is a point lying far out, appearing at a great distance almost like Oldhead. at Kinsale; it goes sloping towards the N. It has in many places chalky spots, whereby it is very easily known.

About five leagues to the westward of Wormshead lies the little island Caldy, whereon stands a white tower, (shewing off at sea like a white sail,) which was built there to know the land by. Betwixt this island and the point of Wormshead the land falls away with a great bay to the northward of Carmarthen and Tenby. In this bay is good anchoring ground all over; on every side of the island Caldy you may also anchor, and have shelter for all winds. A little to the northward of Caldy lies a range of sunken rocks, called the Wallox. To sail to the eastward of Caldy island to Tenby, run close to the eastward of it, through betwixt the island and the sunken rocks, leaving them on the starboard side, or else run along to the eastward, and to the northward of the sunken rocks, leaving them on the larboard side, and sail to Tenby, and anchor there before the town in 5 or 6 fathoms. To the eastward and northward of the aforesaid rocks is good anchorage, 6, 7, or 8, fathoms; it is there all clean ground, and farther off shoal water. You may also sail in through to the westward of the island Caldy, namely, between the island and the point of the main, to Tenby, where it is narrow, yet clean and deep water.

The river of Carmarthen lies from the island of Caldy E.N.E. distant 4 leagues, and the channel leading in there lies in E.N.E. on the East side. On the South side is a great bank, which lies off a great distance from the shore, the outer side going off flat. To sail in there, you may sound it in along by the East and North shore, until you come over the shoalest part of the bar, where there is, at half flood, about 14 feet water; and, being over the bar, there is 4 fathoms: there you may run in by your lead along by the South shore, until you come within this river.

Four leagues to the westward of the island of Caldy lies St. Gawen's-Point, the South point of Wales, by some called the White-Point.

About a league westward of St. Gawen's-Point lies Lenny-Point, by some called St. Patrick; a mile from which is a rock called the Crow, which appears at half tide, and about 4 miles N. W. by N. is the mouth of the famous harbour of Milford. Its entrance is remarkable by having the islands Schookham, Scaumore, and Gresholm, on the West side, Sheep island on the East, and Rat island on the same shore within, which appears like the Mew-stone, near Plymouth, but not so big; besides you have the old Light-house upon St. Ann's-Point to the W. and the Block-house upon the cliff on the next point upon the same side.

The entrance of this harbour is near a mile and a half over, and the channel deep; no danger but what is close along the cliffs, except a small sunken rock, lying a  $\frac{1}{4}$  of a mile to the W. of Rat island, which at low-water in spring-tides has 17 feet water on it; between which rock and the island is a good channel of 4 fathoms. A mile and a half N. E. from Rat island is a great rock above water, called the Stake, which is bold-to.

After you are in, on the larboard, is the road called Dale-Road, where you lie land-locked in 3 fathoms at low-water; and on the starboard side, above the Stake, is Angel-Road, where you anchor at 4 fathoms at low-water. From this place 10 miles up the river you may anchor from 13 fathoms to 3 fathoms at low-water.

A little to the westward of Milford-haven, lie two little islands, the southernmost is the smallest, called Schookham, the northernmost Scaumore; Schookham lies a league and a half W. N. W. from St. Anne's-Point. Scaumore lies a league N. N. W. from



*Directions for coming into the Channel.*

Schookham; and about two miles W. from St. Bride's-Head, between Scaumore and the shore, lies an island called the Middle, about which, and all along the shore of St. Bride's-Head, it is full of sunken rocks.

About two leagues N. N. W. or N. W. by W. from thence lies the island Ramsey. Between these islands is a great bay, called St. Bride's-Bay, and by some the Broad-Bay. Ramsey lies at the North point and Scaumore at the South point of the bay. There is safe riding from any winds from the N. E. about to the S. in 7, 8, and 9, fathoms: Upon the North point of this great bay stands a large town, called St. David's. To the Northward of it the coast of Wales lies N. E. to Cardigan.

Near a league W. S. W. off the island of Scaumore, and about three leagues S. S. W. from Ramsey, lies the little island Gresholm, which is a clean round rock. About two leagues W. northerly from it lie two little islands, which are very foul, called the Smales.

Between Gresholm and the Smales, equal distance, lie two shoals of rocks, the one of which is near a league W. from Gresholm, called the Borrel, some part of which is seen at half-tide, the other about the same distance farther W. called the Hats, shews itself at low-water, but there is water enough between them. You must however be very careful how to sail between them, in a calm, or in the night, for the tide runs very strong. An E. S. E. moon makes high-water.

On the North side of the island of Ramsey, lies the Bishop with his Clerks; these are rocks which lie off to the N. westward of the island, a league from the shore. About five leagues N. W. somewhat northerly from Ramsey, lies another great rock, called Mascus, which is all foul round about, with many sunken rocks; therefore, in sailing thereabout, you must take care of them.

The island of Ramsey, on the S. W. point of Wales, and the S. point of Ireland, bear from each other about E. by N. and W. by S. distant 15 leagues.

There is a channel for small vessels, betwixt the island of Ramsey and St. David's-Head, of 10 fathoms, but very narrow to the northward, through which runs a great tide.

The coast of Wales, from the Bishop and his Clerks, lies N. E. where you have a bold shore, 22 miles to Cardigan island, off which is 10 fathoms water.

**THE TIDES.** At St. Ives, an E. by N. moon makes a full sea. At Padstow, Barnstable-Bar, Lundy, Mine-Head, Milford, Swansea, and Caldy, an E. and W. moon makes high-water. At Bristol, an E. by S. moon makes a full sea.

**DIRECTIONS FOR COMING INTO THE CHANNEL.**

**C**OMING into the Channel, it must be observed that the soundings are not entirely to be depended upon, though several will pretend to know their bearings and distance from the land to the greatest certainty by them: however, you may depend upon having ground to the southward, near the French coast, much coarser than in mid-channel or upon the coast of England.

But, in coming in from abroad, be as exact as possible in your latitude, keeping in 49 deg. 30 min. N. then, if you strike soundings upon the outer-edge of the bank, you will have 85 or 86 fathoms, and will be 67 or 70 leagues to the westward of Scilly, then wearing E. by N.

**SOUNDINGS FROM SIXTY TO FIFTY-FIVE FATHOMS.** After you have struck soundings, make good an East course

course till you shoal your water under 60 fathoms: if you have 55 or 56 fathoms, fine white sand with black specks, like broken pepper, (which are small pieces of shells,) then you are in a fair way abreast of Scilly, and 7 or 8 leagues to the southward of the islands. Come no nearer in the night than 55 fathoms; you are then not above 3 leagues to the southward off the rocks. After you are past Scilly, and between that and the Land's-End, you will have 55 fathoms, rough strong ground intermixed with a great quantity of broken shells.—Observe, the tide flows, in this latitude, 3 fathoms up and down, and  $\frac{1}{2}$  past 4, full and change.

After you have past Scilly, keep on your East course good 15 or 16 leagues, coming no nearer the English shore than 53 or 54 fathoms, or farther to the southward than 60. After you have run this distance, the Lizard will bear N. N. E. or N. by E. 7 or 8 leagues, and you will have 55 or 56 fathoms, with divers coloured shells and black slate stones: then you may, if the weather permit, haul in and make the land.

**SOUNDINGS IN LATITUDE 49°.** But, if you should not be able to get so far to the northward as 49 deg. 30 min. in the latitude 49 deg. you will have 90 fathoms, fine white sand, 66 leagues from the Lizard. But in running up you will possibly shoal your water 5 or 6 fathoms, then deepen to 87 or 90 fathoms, and, in 3 or 4 leagues run, will shoal the water again: but if you find fine sand with black specks, from 90 to 64 fathoms, you may be certain you have the Channel open; and, when you have this ground, you are then S. W. by W. 14 leagues from Scilly. No such soundings are to be found elsewhere.

**SOUNDINGS IN THE LATITUDE OF USHANT.** Coming to the eastward, in the latitude of Ushant you will have 86 fathoms, and are then 36 leagues from the island: if you have

but 70 fathoms, then your distance is 11 leagues. In these depths of water, you will have red gross sand with many pieces of shells, by which you may know that you are not in a fair way, as no such soundings are to be found in the Channel.

**COURSE IN THICK WEATHER.** Therefore, in dark thick weather, come no nearer Ushant than 63 fathoms, or to the Seams (or Saints) than 65 fathoms; as 60 fathoms is between 3 and 5 leagues only distant from the island of Ushant. Here you meet with different soundings, but mostly interspersed with small shells, resembling (and called) hakes-teeth, and between 7 and 9 leagues from Ushant you will have from 65 to 68 fathoms.

**SOUNDINGS TO THE NORTHWARD, OR IN THE STREAM OFF SCILLY.** But if you should be to the northward, or in the stream off Scilly, in the latitude 49° 50', or between it and 50° 10', you will have, for the most part, oozy ground, and perhaps may fall upon a bank of ooze that has only 50 fathoms water upon it; but, between it and the islands, you will have 60 fathoms, and to the northward of them you will have from 53 to 57 fathoms, oozy ground. In clear weather, Scilly may be seen 6 or 7 leagues off.

After you have entered the Channel, it is not safe to keep over to the French shore. You will easily know when you are to the southward by the coarse ground and the overwhelming of the tide, which whirls round in several places with breakers. Keep upon the English coast, from 5 to 7 leagues distance, till you are as high as Portland.

*The preceding directions, for coming into the Channel, have been laid down by the polar meridian, the following are by the magnetic.*

**COURSE ABREAST OF SCILLY.** After you are abreast of Scilly and to the southward 5 or 6 leagues, the course, to the



*Directions for coming into the Channel.*

same distance off the Lizard, is E. S. E. 19 leagues; then haul in and make the land.

**FROM THE LIZARD TO THE START.** The course from the Lizard to the Start is E.  $\frac{1}{2}$  S. or E. by S. 23 or 24 leagues. In running up, come not into less water than 45 fathoms, for 40 fathoms is in the stream of the Edystone. Neither go without the depth of 50: In this depth of water, you will have black stones, as large as horse beans, abreast of the Start.

**FROM THE START TO PORTLAND.** From the Start to Portland the course is E. distance 18 leagues. Here you may run up between 30 fathoms in-shore to 35 or 38 fathoms water, to the southward, most part sand with shells; but if you are inwardly, in 26 or 25 fathoms, you will have ooze and sand.

**FROM THE START TO DUNNOSE.** But from the Start to Dunnose the course is E. by S. 35 leagues; where you will have 35 to 40 fathoms, as high as Portland; after which come no nearer the shore than 25 fathoms, especially when you are above the high land of St. Alban's, as, with strong winds southerly, or in little winds, the tide of flood sets directly in for Christchurch, the Needles, and Fresh-water-Bay, as will be described in the particular directions for the harbours in the Channel.

**DUNNOSE TO BEACHY-HEAD.** The course from Portland is E. S. E. or E. S. E.  $\frac{1}{2}$  E. 15 leagues to Dunnose.

In running up from Dunnose to Beachy-Head, keep without or in 20 fathoms water, and into no more than 28: but, off the Head, you will have 17 and 18 fathoms, 5 or 6 miles from the shore. The course up is E. S. E. 7 leagues, clear of the Owers; and from thence E. by S. 12 or 13 leagues, to Beachy-Head.

**BEACHY-HEAD TO DUNGENESS.** From which to Dungeness the course is E. or E.  $\frac{1}{2}$  S. 9 leagues. Here, in a fair way, you will have 20 or 22 fathoms water.

**DUNGENESS TO THE S. FORELAND.** From Dungeness to the South Foreland the course is E. N. E. between 6 and 7 leagues. Keep no farther off than 16, nor come within 14, fathoms.

**COMING UP CHANNEL.** In coming up Channel, after you are as high as the Start, endeavour to make the coast of England, to avoid the Island of Alderney, the Caskets, &c. but if you cannot safely, with a scant southerly wind, when the tide, both ebb and flood, has an inclination into every bay upon the coast, then keep your lead going, and if you fall into 50, 55, or 60, fathoms, coarse ground, you are in the stream of the Caskets, and must run to the northward, in 40 or 35 fathoms, sand and shells. You will then be to the northward of them, and in a fair way.

**CASKETS.** The Caskets bear from the Start S. E.  $\frac{1}{4}$  S. 18 leagues, and from the Bill of Portland S. S. W.  $\frac{1}{4}$  W. 15 leagues.

**NECESSARY CAUTIONS.** Being too far to the southward, and mistaking the Casket-lights, at first sight, for those of Portland, has often proved fatal, and occasioned the loss of many ships upon the dangers adjacent: therefore as I have been several years master, in the merchant's service, between London and Guernsey, I think it necessary to give some directions to shun those dangers and save the ship.

## DIRECTIONS FOR THE ISLANDS OF GUERNSEY, ALDERNEY, &c.

### THE CASKETS.

**T**HE Caskets is a large island-rock, with several others to the eastward of it, quite clean on all other sides, except those rocks that are always above water. Upon this rock are erected

erected three light-houses, in a triangular form, which may be seen 4 leagues. They lie W. N. W. from the northernmost part of Alderney, distant from the island 7 miles. The southernmost rock upon Alderney and the Caskets bears S. E. by E. and N. W. by W. 8 miles distance, between which are two passages, viz. that between the Caskets and Ortack, and the other, called the Singe (or Monkey) passage, which lies between the island Burhou and Alderney. The passage between the Casket and Ortack is not so safe as the Singe, or is it used but in extremity.

**ORTACK.** Ortack is a remarkable rock, about  $3\frac{1}{2}$  or 4 miles to the eastward of the Caskets. It makes like a hay-rick, and is clean to the westward. You may go between this rock and the Caskets, if you have a fresh breeze of wind; but at least half the distance across must be left towards the Caskets, to avoid le Quest, a rock that shews at half-tide, and lies nearly  $1\frac{1}{2}$  mile from the lights, between which it is all foul ground.

**LE SINGE PASSAGE.** Half a league to the south-eastward of Ortack is the entrance of the passage le Singe, which lies between the island of Alderney and the little island of Burhou. This passage is about  $2\frac{1}{2}$  miles in length, and in the narrowest part (which is between Burhou and a rock called the Corbet, that is always high above water on the Alderney side,) is not above  $\frac{3}{4}$  of a mile over, though you may run within less than a cable's length of either. Here the tide sets right through, E. N. E. and W. S. W. which are the points upon which the passage lies. The passage, in all other parts, is 1 or  $1\frac{1}{2}$  mile wide.

S. S. W. southerly from Ortack nearly 2 miles and W. N. W. from the southernmost rocks on Alderney 3 miles, lies a rock called Pierre au Vrac, only to be seen at low-water in spring tides, when it appears not larger than a boat. Round this rock, close to it, is 15 or 16 fathoms water.

**CASKETS IN THE NIGHT-TIME.** If, in running up Channel, you should fall to the southward of the Caskets in the night-time, after you have got the light N. N. E. from you, steer E. by S. E. S. E. or S. E. by E. according to the distance you are from them. 9 or 10 miles will lead you into the opening of the race of Alderney, which is very clean, except that from Cape le Hague, upon the coast of Normandy, there lie several rocks  $1\frac{1}{2}$  mile from the shore. It is likewise safe except in a gale of wind with a weather tide, when the sea breaks dangerously, for upon the springs the tide runs here 8 knots.

**RUNNING ALONG ALDERNEY IN DAY-TIME.** If in the day-time, you may run along the island of Alderney, at the distance of a mile, or less, the Race is about 8 miles over. The East end of Alderney and Cape le Hague bear E. S. E. and W. N. W. of each other; the course through is N. E. by E. In the South part of the Race the flood runs E. N. E. but in the North part N. E. by E. and N. E. Two miles without the Race the flood sets E. by N. and, when you are 3 leagues to the northward of Alderney, you are in a true Channel tide, as you also are 2 leagues to the westward of the Caskets.

**CASKETS TO SPITHEAD, &c.** But if you should discover the Caskets, and have time and the wind free to go to the northward of them, then your course, if bound to Spithead, will be for the high land of St. Alban's, N. E. 17 leagues, and to Dunnofe E. N. E. easterly 24 or 25 leagues.

**RACE TO THE NEEDLES.** But from the Race to the Needles the course is N. E. 20, and to Dunnofe E. N. E. northerly 22, leagues.

In running across, you will have 40 fathoms towards the French coast, to 35 and 30 upon the English.

Your



Your course from two leagues to the northward of the Caskets, to 2 leagues to the southward of Beachy-Head, is E. 42 leagues. — But you will observe the following directions, if you are bound to

### THE ISLAND OF GUERNSEY, &c.

#### START TO THE S. W. END OF GUERNSEY.

**C**OMING up Channel it would be advisable to make the Start, if winds and the weather will permit, from which to the S. W. end of Guernsey, or the Hanoise is 17 leagues S. S. E.  $\frac{1}{2}$  S.

**TIDES.** But here the tides must be strictly observed; for, between the Caskets and Guernsey, the tide is never still, but sets upon every point of the compass, in the time of an ebb and flood. The tides between Guernsey, the Caskets, and Alderney, at high water, set N. or N. N. E. at a quarter ebb N. W. at half ebb W. at three-quarters ebb S. W. and at low-water S. then, at a quarter flood S. E. at half-flood E. at three-quarters flood N. E. and again, at high water N. But you must observe, that the current sets longer N. E. and S. W. than on any other points of the compass.

From the Caskets to the S. W. part of Guernsey the course is S. W. by W.  $\frac{1}{2}$  W. 7 leagues.

#### TO GO TO THE WESTWARD OF GUERNSEY.

But, in going to the westward of Guernsey, come no nearer the island than to bring the house upon Plein Mont, which is the S. W. end of Guernsey (a table land) in one with a house upon the small island Lehou, by which you will avoid two half tide rocks, called the Grunes and the Sambule. When you are abreast of the Grunes, you will have the Spire-church at le Catel on with a re-

markable rocky hill upon the island, upon which is a watch-house, called Roque de Guet; and when you are abreast of the Sambule, St. Saviour's-church will be in the opening of St. Saviour's-Bay; these rocks lie near a league from the shore. After you are past them steer the same course till you have past the Hanoise, which is a ledge of rocks that runs off from Plein Mont two miles to the westward; but most of them are high above water: come no nearer to them than one mile distance: after you have past them steer S. E. by S. till you open the South end of Sark, with the South end of Guernsey, or St. Martin's-Point; by which you will avoid the half-tide rock called the Lieusses, keeping this course till you open the mill upon Sark a sail's-breadth of St. Martin's-Point, then run along the coast, at about one mile distance, till you open Castle-Cornet, giving the point a birth, to avoid the rocks that lie from Longue Pierre and St. Martin's-Point. After you have the Vale church to the eastward of Cornet-castle, you may haul in for the road. This church stands North, or North a little easterly, three miles from the castle.

Upon the North side of Guernsey the tide makes to the eastward at low-water, but does not set round St. Martin's-Point into the road and through the Little Russel till  $3\frac{1}{2}$  hours flood; therefore be careful that the tide does not set you into the Great Russel, with little wind.

You may anchor to stop a tide on the South side of Guernsey in 35 fathoms water; then you have the North end of Sark open, bearing E.  $\frac{1}{2}$  N. or E. by N. Farther in you may be set adrift, by the rocks cutting your cables.

**ANCHORAGE IN THE GREAT ROAD.** But after you open the Vale church, as before observed, you will steer N. by E. or N. N. E. for the great road, where you may anchor in 10 or

11 fathoms' water, the Obelisk upon Brehon bearing N. E. by E. or N. E. and the church at the town a sail's breadth open of Castle-Cornet. To the northward there is a bank of 3 or 4 fathoms water lies between St. Martin's-Point and the road; and you must observe, that between that point and the Brehon rock, no ballast is to be cast out of the ship, under a penalty. In sight of the castle, hoist your colours, or you will be fined for every shot fired at you for contempt.

**ANCHORAGE IN THE LITTLE ROAD.** But if you should come to an anchor in the little road, which lies to the northward of the castle, (and in which you are sheltered from all winds,) when you let go your bower anchor, if it be a southerly wind, drop it near the castle rock, and give cable immediately; for, though the ground is good, your anchors may come home, being choaked by a large quantity of long weeds: then run out a stream anchor and cable towards the Blanch rock and Sarderet; which lie to the northward. Here you will have  $3\frac{1}{2}$  fathoms at low-water but not above a cable and  $\frac{1}{2}$  length broad.

But if you are bound into the Piers, it would be most advisable to take a pilot. The tides rise here 5 fathoms upon springs and 3 upon the neaps.

**COMING FROM THE EASTWARD TO GUERNSEY.** Coming from the eastward and bound to Guernsey, making the coast of Normandy, you may with great safety run through the Race of Alderney, and then your course to the entrance of the Great Russel is S. W. by W. 6 leagues. In going from the Russel with a N. W. wind, haul as much to the westward, with an ebb tide, as possible, least the S. E. tide should be come away, and let you into the Deroutte, which is a passage between Sark and Jersey. By these means you will also avoid a shoal called

Banc de la Chole, which lies in the fair way of the Deroutte, but to the eastward of the Great Russel. It is generally thought that here the Victory was lost. At low spring tides it has only 12 feet water upon it. It lies N. E. and S. W. 5 miles in length, and is mostly a hard rocky botiom.

**ENTRANCE OF THE GREAT RUSSEL. NOIRE PUTE.** In entering the Great Russel, which lies between Sark and the islands of Harm and Jethou, continue your course S. W. or S. W. by W. observing the large black rock, called Noire Pute, which is always above water. This rock you must leave on the starboard side, 2 or 3 cables length distant; then bring another large rock which is to the southward of Jethou, named le Goubiniere, on with St. Martin's-Point, by which you will shun the Fourquies, that never appear above water. After you have passed the Goubiniere, continue the same course till you bring St. Martin's-church on the middle of Fermain-Bay, (which is low and sandy, between rocky cliffs) bearing W. by N. Keep the church and bay in this direction till you open the Watch-house upon the south pier at Guernsey to the westward of the castle, or till Brehon bears N. by E. then you will avoid the dangers of the Sarderette and le Tete d'Aval, and may then, by standing to the northward, come to an anchor in the road.

**GUIVARD ROCK.** But, with the wind at S. W. stand to the westward, towards Harm and Jethou, the Noire Pute on with the Goubiniere, till you have past the former, then bring the latter on with St. Martin's-Point. But towards Sark you may stand to  $\frac{1}{4}$  part of a mile, it being all clear of rocks, except one, which lies off the point of the isle Aux Marchand's, a cable's length distant, called Guivard.



**COURSE FROM THE RACE OF ALDERNEY TO THE LITTLE RUSSEL.** From the Race of Alderney to the Little Russel the course is W. S. W. westerly near 7 leagues. This passage is not so easy to be attempted by a stranger as the former, but, in coming from the Race, you must leave the Armphrocks to the eastward. These rocks lie 3 miles from the island of Harm: and half a mile to the N. W. of the outermost or little Armphrock lies a sunken rock, called Plate Boue, and there are others that lie the same distance to the westward of the rocks named les Boufresses: to avoid these, keep le Catel church open a sail's breadth to the north-westward of the Vale-castle, till you bring St. Martin's-Point open to the westward of Brehon rock a sail's breadth; then you may, by these marks, steer right into the Little Russel, till you have passed a rock called Rouffe, which is always above water, and appears in a round form; and when you have this rock on with the house upon Harm, you are abreast the Rouffel, a  $\frac{1}{2}$  tide rock, which always appears as soon as the tide makes through to the southward, and always is covered when the tide makes to the northward. Then keep the same direction till you bring Long Pierre (which makes like a sail, and stands 3 miles to the E. N. E. of Rouffe) open a sail's breadth to the southward of the said Rouffe rock, or the low part of St. Martin's-Point on with the West side of Brehon; by which you will avoid a sunken rock, called Grune au Rouge; and when you have Brehon on with Crevichon you are abreast of the rock, and may haul to the westward, lest the tide set you too near the Brehonet, and steer in for Guernsey-Road.

If you are obliged to work in, do not stand so far to the westward as to bring St. Martin's-Point on with the Brehonet, by which you will avoid the  $\frac{1}{2}$  tide rocks, the Rouffel and Grune au Rouge; and (to avoid the sunken rock that lies between Rouffe

and the Brehon rocks) you must stand no farther to the eastward than to bring St. Martin's-Point within a sail's breadth to the westward of Brehon, or Long Pierre a sail's breadth to the south-eastward of Rouffe.

**COURSE FROM THE CASKETS TO THE LITTLE RUSSEL.** But, if you are bound to the Little Russel from the Caskets, the course is S. S. W. 4 leagues. In coming in, observe that you steer towards the Armphrocks, leaving the Brays (which lie N. by E.  $\frac{1}{2}$  a league from the Vale-Point) a mile to the southward of you, till you open the town church with the Vale-castle, then you are to the eastward of the Flafougres, or Anglois rocks, (which never appear above water) and may run into the Russel till St. Martin's-Point is within a sail's breadth of Brehon, and then proceed as before. But you may go to the westward of the Rouffel and the Grune au Rouge, between them and the flat-rock. In going through you will observe a small wood upon the highland of St. Martin's, the East side of which if you bring upon the cupola at the castle, it will lead you through, but if you bring it on with the middle of the wood, it will run you directly upon the Rouffel rock, which lies abreast of Rouffe; and when you have that rock on with the house upon Harm you are abreast of the former. But, in going in through this side of the Russel, do not bring Long Pierre on with the Rouffe till Brehon be on with Crevichon, by which you will avoid the Grune au Rouge, and go to the westward of it. You must be careful not to go too near the shore, after you have past the Brehon rock, to avoid the rocks that lie half a mile from the shore, between St. Sampson's and the pier called Bouees Agenor, or Les Reefes.

**FLOWING OF THE TIDES.** All round the islands of Guernsey and Jersey the tide flows 6 o'clock, full and change, but

but the tide in both Russels runs 9 o'clock, and at the rate of 6 or 7 knots, upon the springs. At the Caskets and Alderney it flows half an hour later.

**COURSE TO THE CORBIER ROCK, &c.** But if you are bound to Jersey from the Hanioise, the course to the Corbier-rock, at the S. W. of Jersey, is S. by E. nearly 10 leagues. And from the road in Guernsey to Cape Gros Nez the distance is 6 leagues, S. by W.

**FROM THE RACE OF ALDERNEY TO JERSEY.** In coming through the Race of Alderney and bound to Jersey through the Derrouette, steer for the Great Russel till you are to the eastward of Banc de la Chole, then S. S. W. leaving the island of Sark to the westward at about a league distance; then you will go one mile to the eastward of the Blanchard, a rock which lies E. by S. from the mill upon Sark, and which never appears but upon low spring-tides. You may then steer S. W. by W. to go without the Paternosters, the West end of which lies from Sark S. by W.  $\frac{1}{2}$  W. 9 miles, and from Gros Nez, upon the island of Jersey, S. W. by S. 5 miles. But allowances must be made for the directions and velocity of the tide.

**ROCH DOUVRE.** S. W. by S. from the Hanioise 6 leagues, and W. N. W. from Gros Nez, upon Jersey, lies the body of Roch Douvre; they lie E. S. E. and W. N. W. 5 miles in length, and many of them always in sight.

**OBSERVATIONS.** The coast of France, from Ushant to Cape de la Hague, is very dangerous, being environed with rocks, many of which are funken, and lie a considerable distance from the shore, especially the Roche Blanche, which lies N. N. E. 10 or 11 miles from the isle of Bas, and N. W. 7 leagues from the Sept isles.

**REMARKS WHEN BOUND TO ST. MALOES, &c.** If you are bound to St. Maloe's, or any other port in Bretagne,

it would be advisable to take a pilot from Guernsey; you may get several who are well experienced, at the port, or from the S. W. end of the island, at St. Saviour's.

For the Directions for the River Thames, from London to the Nore, see Page 1.

*Directions from the Nore down the North Channel to Orfordness, &c.*

**FROM** the Nore down along the North Sand the course is E. and E.  $\frac{1}{2}$  S. 6 miles to the Blacktail beacon: but, if you are turning down below the Nore, keep upon the Warp till you are nearly as low as the Blacktail, as the deep water lies close to the sand, where you will have 9 or 10 fathoms; but the tide of ebb sets off to the southward.

Upon the WARP, at the upper end, is about  $4\frac{1}{2}$  or 5 fathoms, declining gradually downward, till, athwart the Blacktail, you will have 7, 8, or 9.

The BLACKTAIL beacon stands upon the North Sand, having the small grove, called Charlock-Trees, just open with the Land's-End of Sheppy, bearing S. S. W.  $\frac{1}{4}$  W.

**WORKING DOWN FROM THE NORE.** Stand over the Warp from side to side till you deepen the water, and till you get down as low as the Blacktail; then come to an anchor, if the tide or time do not permit you to go through Shoe-hole.

The black buoy of the MOUSE lies E. by S. from the Blacktail beacon three miles.

**SHOE-HOLE.** The course from the Blacktail to the Shoe beacon is E. by N. or E. N. E. 6 miles, according as you have the wind and tide. This part of the Swin navigation is very difficult.



ficult. The water is deep, as 11, 12, or 13, fathoms, mid-channel, and on each side steep-to, therefore put about the first shoal-cast of the lead on either side, as a ship which sails fast may shoot on shore before a second cast can be hove.

But in working down from the Warp, with little wind, do not stand too far towards the Ooze edge abreast the Blacktail, lest the tide should set you to the southward of the Mouse, and by that means you cannot get in Shoe-hole.

**SHOE.** After you are abreast the Shoe beacon, which bears N. E.  $\frac{1}{2}$  E. 3 miles from the buoy of the Mouse, your course down to the black buoy of the Middle is N. E. 6 miles. Between the two is an excellent road for ships, upward or downward bound, in 6 or 8 fathoms water, any where within a mile below the Shoe to within a mile above the buoy of the Middle.

Working down, stand to the North Sand in 4 or 5 fathoms; but to the southward, towards the Burrows, put about when you come into 9 fathoms, lest you come upon the Burrow Knowl, upon which is not above 9 feet, at low-water. The marks for it are Whiticar beacon N. by E. 3 miles just open to the westward of St. Olyth's trees, and the Shoe beacon W. by S.  $\frac{1}{2}$  S.

The black buoy of the Middle and Whiticar beacon lie from each other N. by E. and S. by W. 2 miles distance; but from the buoy of the Middle to the buoy of the Spits is N. E. 5 miles.

Working down above the Middle, you must not stand too far to the eastward, lest you get to the southward of the Middle, as the tide sets strong through between that sand and the Burrows; and you must observe, that near the Whiticar the sand is steep-to, though below it is a shoal, running far down, called the Whiticar Spit, which has, near the sand, 2 fathoms, then  $2\frac{1}{2}$ , 3, to 4, fathoms. Between this and the Buxey Sand is the entrance into the WHITICAR SWATCH, where you have 6 fathoms.

The course, from between the buoy of the Middle and the Whiticar beacon, to the Hook of the Gunfleet, is E. by N. about 12 or 13 miles, and from thence to the buoy of the Gunfleet N. E. by E. 4 or 5.

But if you are at the buoy of the Middle, and have a working wind, stand to the Whiticar in 7 fathoms, and off to the Middle into 9, and then put about, as upon that side lies the deepest water, and that very near the sand; but, after you are one mile below the Whiticar, you may stand across the Swatch to 5 fathoms upon the Buxey, and to the Middle into 7 or 6, mid-channel 8 fathoms.

But after you are below the Spitway, standing from the northward, you will have, going over toward the Middle, from 5 to 6 and 7 fathoms, then 5 and  $4\frac{1}{2}$  upon the Middle-ground, the upper part of which is much grown up; then again 7 and 8 fathoms to the southward. But when you are about two miles below the Spitway, come no nearer the Gunfleet than 8 or 7 fathoms, and then put about, crossing over 9 or 10 fathoms, then upon the Middle-ground 6 or 7. After you are over, do not stand too far towards the Heaps, the buoy, being white, is not always to be seen; but, after you fall off the Middle, you may safely stand from 10 to 9 or 8 fathoms, and then about.

The white buoy of the HEAPS bears from the buoy of the Middle E. by N. 6 miles; and, with the wind to the eastward of the South, you may keep the lead along the Middle in 7 fathoms water. Much Holland Church bears from the Heaps N. N. E.  $\frac{1}{2}$  N.

Being below the Heaps, you will have more water upon the Middle-ground, as 8 or 9 fathoms, down towards the beacon upon the Gunfleet. The Gunfleet is steep-to near the Hook, and from

from thence, down to the black buoy, come not any nearer the sand than 10 fathoms; the beacon upon the Hook bearing S. 7 or 8 miles from the Naze Tower.

Working down below the Hook, stand to the sand into 10 fathoms, and off towards the Sunk in 13 or 14.

The black buoy of the GUNFLEET lies with Walton-Hall (a white house upon the Naze) in one with the Naze Tower, bearing N. W.  $\frac{1}{2}$  W. Harwich N. N. W. and Baldsey N. N. E. In the night, when you open Harwich lights, you are abreast the buoy.

If it be low-water when you are as low down as the buoy, and the wind be to the North-eastward, it is better to run into the Wallet, through Goldermer's Gat, and come to an anchor under shelter of the West rocks in 6 or 7 fathoms water, the house upon the Naze open a sail's breadth to the westward of the Tower.

**BOUND IN SLED** from the black buoy of the Gunfleet, your course to the red buoy of the Rough is N. E. by N. 6 miles; but if the wind be to the westward, you may run in along the West rocks in  $4\frac{1}{2}$ , 5, and 6, fathoms. The best mark for this channel is Baldsey Church on with a small tuft of trees, which stand between the rising part of the cliff and the wood, or you may bring Alderton Church on with Baldsey Church, being then on with the rising part of the cliff. The outer part of the rocks lies with the Naze Tower bearing W. N. W. then on with the westmost tree upon the Naze; the body of them lies due East from the Tower, and the East end S.  $\frac{1}{2}$  E. from the South end of Baldsey cliff.

From the white buoy of the Heaps into Hosley-Bay the course is N. N. E. or N. by E. 10 or 11 miles: but in the Sled-way you must observe the settings of the tide; the flood sets W. S. W. and the ebb E. N. E. Working into the Sled, stand to the eastward

till Baldsey Church comes on with the North part of the wood, in 8 or 9 fathoms, and to the westward to 6 or 5 fathoms, the Church on with the rising part of the cliff, except at (or near) the red buoy of the Rough, the buoy of which lies with the following marks in 17 or 18 feet at low-water, viz. Harwich Steeple just open to the southward of the Port, bearing N. W. by W. Ramsholt Church and Earn open of Baldsey Cliff, and Baldsey Steeple a large sail's breadth open to the eastward of the tuft of trees.

Working in below the Rough, you may stand to the eastward, Baldsey Church to the eastward of the Wood; but in standing to the westward in the night be careful that you do not stand into the Swatch, which lies between the Cork and West rocks, in which is 6 or 7 fathoms water, and is difficult to get out again in dark weather. The East end of the Cork bears N. E.  $\frac{1}{2}$  E. from Harwich, and S. from the West end of Baldsey Cliff: just below which is Cork Hole of 8 or 9 fathoms water. There is good anchorage under the Cork in 7 or 8 fathoms, for S. W. and W. S. W. winds.

Standing towards the CUTLER, stand not into less than  $5\frac{1}{2}$  fathoms water, or Harwich Church near midway between Felixtow Cliff and Landguard Fort: you are above this stand when Ramsholt Church is in sight, and below it when the wood comes on with Baldsey Church.

From this working down in o HOSLEY-BAY, stand off into 8 fathoms, and in shore to 5. The best anchorage in Hosley-Bay is about two miles below Orford-Haven, in 6 or 7 fathom water, abreast a white house that stands between two groves of trees. Hosley Church bears N. W. by N. from the S. W. end of the Whiting, Baldsey Church N. W. by W. and Orford N. N. E.



*Directions from the Swin out of the King's Channel.*

After you are entered into Hosley-Bay, your course through is E. N. E.  $4\frac{1}{2}$  miles to the East end of the Whiting, then E. by N. 2 miles to Orfordness.

Working through the bay, stand to the beach into 5 fathoms, and off to 7 or  $7\frac{1}{2}$ , or till you bring Orfordness high light N. E. by E. which is a good mark to run along the inside of the Whiting, by day or night, but be careful of the Hook, which is steep-to; the mark for which is just open to the westward of the Castle, and lies about  $1\frac{1}{2}$  mile above, and some way within the stream of the buoy.

The white BUOY of the WHITING lies with Orford-Mill one-third of the way from the Church to the Castle, or the Castle midway between the two westmost houses in Orford, bearing N. by W. and the High-light N. E. by N. but, if the buoy should be gone, open the Mill to the eastward of the Church, and then you are certainly below it. After you are below the buoy do not stand to the beach into less than 9 fathoms, for just above the Ness is grown up a very dangerous shelf, which runs off from the shore about  $1\frac{1}{2}$  cable's length distant, and has not above 3 or 4 feet at low-water upon it, and has 9 fathoms within a ship's length without it. In mid-channel, between the Ness and Whiting, is 12, 13, and 14, fathoms, water.

From the white buoy of the Whiting, till you get down below the Ness, runs a Spit from 4 to 5, 6, 7, and 8, fathoms, till you get the Lights open to the northward.

From Hosley-Bay, bound to sea, you may, after passing the buoy, steer S. E. by E. or with the Lights on, bearing then N. W. by W.  $\frac{1}{2}$  W. when, after you have crossed the Spit of the Whiting, you will have 10 fathoms, which is a flat, that runs off from the Ness into the stream of the Shipwash.

But if you are bound to the northward, keep along shore, observing not to shut Baldsey Cliff with the point of Orford-Beach till you open Dunwich Cliff with Thorpness.

After you are below Orfordness, be careful to avoid Aldbro' Knapes, the body of which lies with Orford Church and Castle on with each other, and Iken Church on with the Limekilns at Aldbro' which stand to the southward of the Fort; but Orford Church and Castle a sail's breadth either way will carry you clear of the Knapes.

Upon Orford-Beach, about 400 yards from the sea-side, is an excellent spring of fresh water, where you may fill any quantity. The mark to find it is, to bring the Mill upon the chancel of the Church, which will lead you directly to it.

*Directions from the Swin out of the King's Channel.*

**B**EING in the Swin, and bound out of the King's Channel to the northward, when you are as low as the beacon, steer E. by N. across the Thwart-middle, which lies in the King's Channel, upon which you will find 7 or 8 fathoms, after you are over it 9, 10, and 11, and when you fall in 14 or 15 fathoms you are without the Shipwash, and may steer N. E. and N. E. by E.

The West end of the Shipwash lies with the Naze Tower bearing E.  $\frac{1}{4}$  N. Baldsey Church on with the North part of the Wood bearing N. N. W.  $\frac{1}{2}$  W. and Orford Church and Castle N.  $\frac{1}{4}$  W.

This sand lies N. E. and S. W. about 3 leagues in length, and dry in many places: 10 or 12 fathoms is near enough to come to this sand. The North end lies S. by E. 4 miles from Orfordness.

There is also a good channel within this sand, between it, the Kettle-ledge, and Whiting. When you are at the buoy of the Gunfleet

*Directions from the Black Buoy of the Gunfleet round the Longsand-Head, &c.*

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Gunfleet, steer N. E. by N. leaving the buoy of the Rough half a mile to the North-westward. Continuing this course, the least water you will have is  $4\frac{1}{2}$  or 5 fathoms. The mark to run by is, Aldbro' Church just without the Great-light at Orfordness.

*Directions from the Black Buoy of the Gunfleet round the Longsand-Head to the North Foreland.*

**B**OUND into the Downs from the black buoy of the Gunfleet with an ebb tide, steer S. E. but with a flood, E. by S. and E. S. E. till the water deepens to 16 or 18 fathoms, then you are without the Longsand-Head, and in a fair way. Turning out, stand to the Shipwash in 8 fathoms, or till the Naze bear W. by N. and to the Sunk to 10 or 11; the Sunk end bears S. E. from the Naze: between the Sunk and the Shipwash are 13 or 14 fathoms. Here the first quarter flood sets S. S. W. and the remainder W. S. W.

The Sunk and Longsand-Head bear off each other E. S. E. 4 miles, between which run in the Black-deeps.

The Longsand-Head bears S. E.  $\frac{1}{2}$  E. from the Naze 14 or 15 miles; the Kentish Knock bears S. from the Longsand 5 miles; and from the North Foreland N. E. by N. 6 leagues. Here, in the fair-way, is 18 or 20 fathoms, but in working stand to the Longsand and Kentish Knock to 12 or 13 fathoms, and off into 18, 20, or 22.

Your course from the Kentish Knock to a fair-way of the Gull Stream is S. S. E. 7 leagues.

Then proceed as in the directions for the South and Queen's Channels. See Page 7.

*Directions for sailing into Harwich, &c.*

**I**F you are in the Sled with an easterly wind, and intend going into Harwich, stand down till you get Harwich Church on with the Brewhouse at the Fort, (or the Church a large ship's length open to the eastward of the Fort,) this mark leads to the eastward of the Cork and Cork-ledge. Keep this mark till you get a white house, which stands upon the S. W. land, open and shut with the Naze, or the said land a ship's length open; you will be then within the Cork-ledge, which has not above 5 feet upon it at low-water: you may then steer N. W. and W. N. W. till you shut the S. W. land; observing to keep Orford Church and Castle open an oar's length with the low point of Baldsey Cliff, till you get Harwich Church open to the westward of the Fort, then you are above the Platters; then steer more in towards the Poul-end, keeping Baldsey Church open with Felixtow Cliff, till you bring the lights in one, never coming nearer the shore than 5 fathoms water: after the lights are on, bearing N. N. W. keep them so till near the Fort, then haul round the point at about  $\frac{1}{2}$  or  $\frac{3}{4}$  of a cable's length distance from the Beach, to avoid the Altar, upon which is not above 5 or 6 feet water. After you are past the Fort, keep the East shore on board till you bring the Flag-staff and Clock-house in one, or till the houses in the Fort make in three distinct parts, like two streets; this will lead in the best of the water over the Glutton. As soon as you open Dovercourt Church you are above the Gristle, and may run up before the Town and anchor there, or run over toward a cliff, called Fagbury, and anchor in Salt-Road.

*Direction*



*Directions from Hosley-Bay to Harwich.**Directions from Hosley-Bay to Harwich.*

**A** Ship from Hosley-Bay, bound into Harwich, must steer W. S. W. and S. W. by W. up to the Cutler, coming not any nearer that sand than  $5\frac{1}{2}$  fathoms water; and when Harwich Steeple is nearly half way between the Cliff and Fort, you are far enough without it, and when you get Ramsholt Church open of Baldsey Cliff, you are above it, and may haul in, keeping Orford Church and Castle an oar's length open of the point of Baldsey Cliff, to avoid the Platters, then proceed as before.

In working up, you have very irregular soundings, as 4, 5, and 6, again 4, 5, and  $3\frac{1}{2}$ , fathoms. Stand no nearer Felixtow Cliff

and the Platters than 5 fathoms, and off to 7, the S. W. land open.

If you intend to anchor in the Rowling-grounds, as soon as you are within the Ridge, which lies a small distance to the S. W. of the Andrews, steer over towards the Cliff till the lights are open a sail's breadth to the westward, and the high part of Baldsey Cliff on with Felixtow Cliff. Here you may anchor in 5 or 6 fathoms, an excellent road for easterly winds. N. B. The last half flood and first half ebb set strong over the Andrews.

Also, if in a ship of 16 or 17 feet water, and it blows strong, stay till half or three quarters flood before you run for the harbour.

Here it flows  $11\frac{1}{2}$  full and change.

# A N A C C U R A T E T A B L E

O F T H E

## L A T I T U D E S A N D L O N G I T U D E S

Of the Principal Headlands, Harbours, &c. in the British Channel.

The Longitude from the Meridian of London.

### C O A S T o f E N G L A N D.

	Latitude.	Longitude.
	<i>d. m.</i>	<i>d. m.</i>
CAPE CLEAR	51 21 N.	9 50 W.
Old Head of Kinfale	51 35	8 50
Hook Tower at the Entrance of Waterford	52 02	7 15
Scilly (southernmost rock)	49 54	6 45
Land's End	50 05	6 00
Lizard	49 57	5 24
Start	50 09	3 45
Portland	50 30	2 30
Dunnofe	50 42	1 09
Beachy-Head	50 47	0 20 E.
Dungeness	50 57	1 02 E.
South Foreland	51 10	1 29 E.
North Foreland	51 24	1 32 E.

### Upon the Coast of FRANCE, between BREST and CALAIS.

	Latitude.	Longitude.
	<i>d. m.</i>	<i>d. m.</i>
The Seams or Saints	48 00 N.	5 03 W.
Brest	48 23	4 26
Ushant	48 29	5 00
Isle de Bas	48 47	3 57
Cape Freehall	48 41	2 15
Roche Douvre	49 10	2 52
Corbier-Rock, S. W. part of Jerfey	49 05	2 27
Caskets	49 47	2 30
Cape de la Hague	49 47	2 02
Cape Barfleur	49 41	1 10 W.
Havre de Grace	49 29	0 12 E.
Dieppe	49 55	1 09 E.
Entrance of the River Somme	50 14	1 37 E.
Cape Gros Nez	50 52	1 35 E.
Calais	50 57	1 50 E.
Dunkirk	51 02	2 26 E.



## TIDE-TABLE for the BRITISH CHANNEL.

## COAST OF FRANCE.

Places Names.			Time of Flow.		Places Names.			Time of Flow.	
			H.	W. in feet.				H.	W. in feet.
WITHOUT the Seams	—	—	4		Mouth of the Seine	—	—	9	18
In the Raz of Fontenay	—	—	4	18	Quillebeuf	—	—	10 $\frac{1}{2}$	
In the Yroise	—	—	4 $\frac{1}{4}$	18	Rouen	—	—	12 $\frac{1}{4}$	
In the Bay of Brest	—	—	3 $\frac{1}{2}$	20	Havre-de-grace	—	—	9	18
In the Port of Brest	—	—	3 $\frac{3}{4}$	20	Feschamp & St. Valery en Caux	—	—	10	18
In the Passage du Four	—	—	4	20	Dieppe	—	—	10 $\frac{1}{4}$	18
Without Ushant at Sea	—	—	4 $\frac{1}{2}$		St. Valery sur Somme	—	—	10 $\frac{3}{4}$	16
Isle of Bas	—	—	5 $\frac{1}{4}$	25	Entrance of the Somme	—	—	10 $\frac{1}{2}$	18
Morlaix	—	—	5 $\frac{1}{4}$	18	Etaples and Boulogne	—	—	10 $\frac{3}{4}$	18
Seven Islands	—	—	5 $\frac{1}{2}$	30	Ambleteuse	—	—	11	18
Isle of Brehaut	—	—	5 $\frac{1}{2}$	45	Calais	—	—	11 $\frac{1}{2}$	18
Bay de la Frefnay, St. Malo, and Cancele	—	—	6	45					
At Grandville	—	—	6	40					
Jersey	—	—	6	40					
Guernsey	—	—	6	40					
Alderney	—	—	6 $\frac{1}{2}$	30					
Cherbourg	—	—	7 $\frac{1}{4}$	18					
Le Hague	—	—	8	18					
Caen	—	—	9	18					

The tides upon the coast of Bretagne run to the Eastward one hour, or 1 and  $\frac{1}{2}$ ; between the islands of Guernsey, Jersey, Alderney, &c. 3 hours; and from the Race of Alderney along the coast of Normandy, at 1 league distance, 2 hours and  $\frac{1}{2}$  after high water, and nearly 3 hours upon the coast of Picardie.

## COAST of ENGLAND and PART of IRELAND.

Places Names.	Time of H.W.	Flow. in Feet.	Places Names.	Time of H.W.	Flow. in Feet.
CAPE Clear	3 $\frac{3}{4}$		At Pool and Christchurch are 2 floods and 2 ebbs in 12 hours; but the floods run no more than 5 hours, and the ebbs 7; the latter flood	12	6
S. E. coast of Ireland	5 $\frac{1}{4}$		Needles	9 $\frac{1}{2}$	9
In a fair way entering the Channel	4 $\frac{1}{2}$	18	South Yarmouth	11 $\frac{1}{2}$	12
Scilly	4 $\frac{1}{2}$	20	Cowes	11 $\frac{1}{2}$	15
Mount's Bay	4 $\frac{1}{2}$	19	Portsmouth-Harbour and Southampton	11 $\frac{3}{4}$	18
Lizard, Helford, Falmouth, and Foy	5 $\frac{1}{4}$	18	St. Helen's	11 $\frac{1}{4}$	16
Plymouth-Sound	5 $\frac{1}{4}$	18	Selfey Park	11 $\frac{3}{4}$	
Hamoaze	5 $\frac{1}{2}$	18	Beachy-Head	11 $\frac{1}{2}$	20
Edystone	5 $\frac{1}{4}$	18	Rye	11 $\frac{1}{4}$	24
Salcomb	5 $\frac{1}{4}$	18	Dungeness	11 $\frac{1}{4}$	24
Dartmouth	5 $\frac{1}{4}$	18	Dover	12	16
Torbay	5 $\frac{1}{4}$	16	Downes	10 $\frac{1}{2}$	16
Exmouth	5 $\frac{1}{2}$	14			
Portland and Weymouth	7 $\frac{1}{2}$	8			
Stutland-Bay	8 $\frac{3}{4}$	6			
Pool	9	6			

It is high water near 3 hours from Scilly to the Isle of Wight, between which and Beachy-Head 1 hour and a  $\frac{1}{4}$  after high water upon the Shore; at Dungeness 4 hours, and in the Downs 3 hours and  $\frac{1}{2}$ .

But, at the Needles, Cowes-Road, Spithead, Selfey-Park, &c. the tide makes to the westward 2 hours and a  $\frac{1}{4}$ , before high water in the harbours.

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And, in the harbours of Pool and Christchurch, there are two floods and as many ebbs in 12 hours; the 1st flood, which is proper high water, is at 9 o'clock, full and change; then it ebbs 1 hour and a  $\frac{1}{2}$ , and then flows again the same length of time (i. e.) till 12 o'clock, which is the 2d high water; then it ebbs till 4; making in all 5 hours flood and 7 hours ebb.

Directions



## *Directions for the N. E. Coast of SCOTLAND, the PENTLAND FRITH, &c.*

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The following courses are by the magnetic compass, which at present deviates from the pole, in all parts of the British Channel and North Sea, 2 points to the westward; at least it is the nearest allowance you can shape a course by, the variation in the North Sea being  $21^{\circ}$ , and in the Channel  $23^{\circ}$ ; but in the Cattegut and Sound you will not have above  $18^{\circ}$  variation, or better than 1 point and a half.—The soundings are from those made at low water.

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**T**HE Pentland Frith is that passage, or strait, which forms a communication between the North Sea and the Western Ocean, lying between the North part of Caithness, in Scotland, and the Orkney Islands, through which runs the most rapid tide, and with the greatest diversity, of any stream upon the coast of Great-Britain. — The most common passage through this frith, for ships coming from or going to the westward, is between the islands Stroma and Swona, and between Duncansby Head and the Pentland Skerries. — If you are to the southward, and bound through the Pentland Frith, be careful not to take Noss Head, which is on the South side of Sinclair Bay, for Duncansby Head, (as it has a very similar appearance,) and thereby get imbayed on the East coast of Caithness. But, if you are at a distance from the land, Duncansby Head is easily known by a large rock, about a mile to the southward of the head, commonly called Johnny Groat's House, or the Castle of Duncansby. This rock appears, over the land, like a house upon a hill.

The tide, upon a spring, runs with the velocity of 9 miles an hour, but, upon a neap, scarcely three. In the middle of the frith the flood runs, full and change,  $11\frac{1}{2}$ , and the slack conti-

nues about half an hour; but, upon the South side of the frith, in Gill's Bay and at Duncansby Head, it runs  $8\frac{1}{2}$  only.

In sailing through the frith with an ebb tide, keep nearer to Duncansby Head and the island Stroma than the Pentland Skerries and Stroma; but, with a flood tide, coming from the westward, the contrary is to be observed, the flood setting to the southward and the ebb to the northward; but, if the wind be scant southerly, then, with a flood, keep close to Stroma, by which you will avoid the danger of the Pentland Skerries and the foul ground between them.

The Pentland Skerries lie from Duncansby Head E. N. E. 4 miles; and the islands Stroma and Swona lie N. E. by E. and S. W. by W. from each other, near a league distant. From the entrance of the frith, between Duncansby Head and the Skerries, to the North end of Stroma, is 5 or 6 miles N. N. W.  $\frac{1}{2}$  W. then your course, to the westernmost part of the frith, between Dinnet Head, on the coast of Caithness, and Thurness, upon Hoy Island, is W. N. W. and N. W. by W. 8 or 9 miles; then a W. N. W.  $\frac{1}{2}$  W. or N. W. by W. will run you clear out between the Stack and Skerry and Cape Wrath. — The Stack and Skerry bear

bear from Hoy-Head N. W. by W.  $\frac{1}{2}$  W. 8 leagues, and N. E. by E. 9 leagues from Cape Wrath.

It is reported, with some degree of credit, that a very dangerous rock lies 5 or 6 leagues about North from Cape Wrath.

The islands of Barra and Rona lie from Cape Wrath N. N. W. distant 42 miles.

There is also another good passage through the frith, through Gill's Bay, and between St. John's Head, on the coast of Caithness, and the island of Stroma. This is the best way when the flood stream is not done in the middle of the frith, as the tide goes to the westward nearly 3 hours sooner than between Stroma and Swona. But observe, that a quarter of a mile from St. John's Head lies a ridge of rocks, and that South from the S. W. end of Stroma lies a half-tide rock, at about a cable's length distance from the island.

In this frith, if the tide should be unfavourable before you get through, there are several eddies where you may stop a tide, by keeping the ship under way, or anchoring in them till near slack tide; but, always be careful to take up your anchor before the tide comes away, or, in spring tides, you will be obliged to slip, and thereby lose your anchor and cable.

The anchoring-places, or where you may stop a flood, under fail, are:

First, Under the Pentland Skerries. This eddy never joins again, but expends itself in the North Sea.

Secondly, Liddle's Eddy, at the S. end of South Ronaldsha. This eddy is 1 mile and  $\frac{1}{4}$  from the shore in length, and as far over in the middle; it extends more than half-way to the Great Skerry.

Thirdly, The eddy under Stroma; which extends a mile and a quarter from the shore, and is nearly 2 miles over.

Fourthly, In Gill's Bay. This eddy is caused by St. John's Head. And,

Fifthly, In the eddy upon the East side of Swona, which extends 1 mile  $\frac{1}{2}$ , and is better than a mile wide.

To anchor under the Skerries, bring the middle of the Little Skerry on with the middle of the Great Skerry, or the West end of the Little Skerry on with Hoy-Hill; then anchor in 14 fathoms, clean ground, sand and shells, the Little Skerry bearing N. N. W. half a mile from you.

In Liddle's Eddy you may anchor in 17 or 18 fathoms, the E. end of the Great Skerry S. by E. southerly, distant from South Ronaldsha 1 mile or 1 mile and  $\frac{1}{4}$ ; the ground here the same as under the Little Skerry.

You may anchor right off the middle of the island of Stroma, half a mile from the E. shore, in 16 fathoms, sand and shells.

To the E. ward of St. John's Head, in Gill's Bay, you may stop a tide in 5 or 6 fathoms, clean ground, intirely out of the tide-way. Also on the East side of Swona, in 16, 18, or 20, fathoms water, about a cable's length off North Haven, a small cove near the northernmost house. Here the ground is smooth and rocky.

If in any of the eddies you keep under fail, be careful not to stand into the edge of the tide, which is easily known by the rippling, lest you should not fetch the eddy again, being set above it. — There are also eddies with an ebb tide, under the Skerries and the islands Swona and Stroma, but no place to stop a tide with an anchor.

If you are becalmed in Pentland Frith, and cannot anchor in any of the eddies, there is yet little danger to fear; for, although the tide will set you near the islands, it will, at the same time,



carry the ship from, and set her past, them: and, if you are even driven between the Great and Little Skerry, if you are nearest to the Great one, you will be set to the northward of the Cleta Skerry and the shoals which lie between it and the Little Skerry; but, if you are too near the Little Skerry, endeavour to get to the northward, in which you will be assisted by the tide; but, if you are between Swona and the Skerries, and are situated in such a manner as to have the Little Skerry open a sail's breadth with the Great one, you are then in danger of driving too near those islands and shoals; for which reason, tow so far to the northward till you bring them on with each other, and then you will drive clear.

The Cleta Skerry is always above water, and lies E. S. E. southerly from the Great Skerry about 1 mile, between which and the Little Skerry it is  $\frac{3}{4}$  of a mile, all foul ground. Mid-way lies a half-tide rock, called Lotha Skerry, which is the most dangerous rock in the frith, with a flood tide and little wind.

The Lotha, which lies in the mouth of Burwick-Bay, near the S. W. point of South Ronaldsha, is another bad rock, part of which is covered only at high water, when it is easily perceived by the rippling it causes. With a flood tide, coming from the westward, keep at least a mile from the West shore of South Ronaldsha, and then the stream will carry you clear of it; and, in coming from the eastward with an ebb tide, keep half a mile from the shore; but, if you are so near the shore that you cannot go without it, keep in mid-channel between it and the South Ronaldsha, the channel being about a quarter of a mile wide, and having sufficient water for any ship.

After passing the frith, when bound to the westward, there is

no place, between the Orkney and the Lewis Islands, into which a stranger can take, with any degree of safety, except

LOCH ERIBOL. This loch is all clean, and lies  $3\frac{1}{2}$  leagues to the eastward of Cape Wrath. In going in, leave the island Haa on the starboard side, and the Whitenhead to the eastward. The Whitenhead is a low bluff point of a whitish colour, and makes with two ascents, like steps: the land to the eastward is high and regularly formed, but highest in the middle. You may occasionally borrow near the Whitenhead; then run up above the island Chorie, where there is good anchorage for any number of ships in 12 or 14 fathoms water. The best anchorage is 'thwart the two rivulets that run from a hill on the West side of the loch.

You may also anchor, on the S. E. side of the rock, in Camislin-Bay.— There are also other places of shelter, as, Scrabaster-Road, in 6, 7, or 8, fathoms, good holding-ground, and you may moor to rings fixed in the rocks. At Inchcomb, on the S. E. side, ships may ride in 8 or 9 fathoms. Also between the Rabbet-Islands in 4 or 6 fathoms, and lie land-locked by the island Rona.

#### *Observations concerning the Tides in the Pentland Frith and Orkney Isles.*

IN the Pentland Frith and Orkney Isles, the water flows about 8 feet with an ordinary spring-tide, and about  $3\frac{1}{2}$  upon a neap; though, sometimes, by the wind blowing hard from the W. or S. W. spring-tides will rise 14 feet, and neaps 6 or  $6\frac{1}{2}$ . N.E. E. and S.E. winds, which cause small tides, may sometimes occasion the springs not to rise above 6 feet, and the neap-tides 2 feet. The greatest tides are generally the fourth day after

fall

full and change, and the smallest the same time after quarter-day.

The velocity of spring-tides in the Orkneys, among the southern islands in the narrow sounds, is about 8 miles an hour, and the neaps 2 or  $2\frac{1}{4}$ : but, amongst the northern islands, the springs run, in different places, from 4 to 6 miles an hour, and the neaps in proportion: but, in the Pentland Frith, the springs run 9, though the neaps run hardly 3, miles per hour. — The slacks continue, upon a spring, half an hour, and, upon neap-tides,  $1\frac{1}{2}$  hour.

The flood comes from the N. W. through the Orkneys and Pentland Frith; but, upon the coast of Caithness, it sets along shore, although, at the distance of a league and a half or two leagues from the land, the stream of the tide is scarcely sensible, except it be obstructed by rocks or shoals that lie not many fathoms under the surface. During the time the flood runs, the stream will gradually alter its direction from the E. towards the S. and the ebbs the contrary.

If an island or rock lie directly in the tide-way, the stream will divide some time before it comes to it, and one part set round one side or end of the island or rock, and the other part round the opposite side or end, and will set the ship off in such a manner that she will not come near it; so that, in a calm, a ship, which is apparently driving bodily on a rock or island, will be set off in such a manner as not to be in the least danger. If the island be clean round, with a sufficient depth of water, the stronger the tide the less danger.

☞ This remark is not more particularly adapted to these places than to all others where a rapid stream runs, as, in Guernsey, Jersey, and the islands in their vicinity, as well as among the Milford islands, in St. George's Channel.

After the two tides have passed the island or rock, they meet again at some distance from it. The larger the island, and the stronger the tide, the longer will be the eddy caused by the interruption of the course of the stream. Those under Stroma and Swona are the largest in the Pentland Frith.—But, the eddy caused by the Pentland Skerries, with a flood tide, gradually loses itself in the North Sea, as the tide, which is parted by them, never meets or joins together again.

WHIRLPOOLS, &c. These eddies and the edge of the proper stream near the islands will cause whirlpools, or wells, in form of a bell with the mouth upward. With a spring-tide and calm weather, the wells will draw in and swallow up a boat, but will not hurt a vessel, except turning her round. After these whirlpools are formed, they set with the tide and diminish gradually, till they quite disappear. But, in blowing weather, or when the sea breaks, there are no wells, or whirlpools.

In strong springs, during the last hour or last half-hour of the tide, in mid-channel, and sometimes at the distance of a mile and a half from the shore, it will appear as if it ran over shoal-ground, being all breakers; but there is not any danger to be feared.—The like may be observed in other places, where the tide runs strong and begins to run narrow.

But, when the tide sets directly over a rock that lies under water, (if steep-to,) and then falls immediately to the bottom, swelling and agitated like boiling water, it will bring up with it sand, shells, and other loose bodies, and at some distance from the rock it will acquire a circular motion, and a whirlpool will begin, which will be carried away by the tide till quite extinguished, and then another will begin, which continues till the tide eases, or the water rises or falls so far above or below the sur-



face of the rock that the cause ceases.— There are several other places on the coast of Orkney, called rosts, upon which, during the tide of ebb only, the sea breaks with great violence and height, even in calm weather; but they are not the least dangerous upon a flood. They rage most upon a spring-tide and with westerly winds.

From **Duncansby Head**, at two hours flood, over towards **Stroma** is a very hot tide, called the Boar of Duncansby, which, with an easterly wind and spring-tide, breaks very much. This is occasioned by a ledge of rocks, in that direction, which lie about 8 fathoms below the surface.

Hell Ebb is another violent breaking tide, which runs from Duncansby Head, but more to the eastward. This breaks most with an ebb and westerly winds.

There is a small ledge of rocks, some of which appear at low water, lying off from **St. John's Head**, called the Men of May, from which, towards **Walls**, at half-ebb, a very strong tide sets over, being joined by another, which runs from the North end of **Stroma**: these two united are joined by two others off **Red-Head**; the one from **Swona**, and the other from **Cantac-Head**, upon **South Walls**. When these are united upon a spring-tide and strong westerly winds, it is nearly impossible to pass them.— They then set into the N. W.

*Directions from the Pentland Frith to the Frith of Forth.*

FROM **Duncansby Head** to **Buchan Ness** the course is S. S. E. 23 leagues to **Kinnard's Head**, the northernmost point of **Buchan Ness**. But, from **Holm-Sound**, in the Orkneys, the course is S. by E. 25 or 26 leagues; and, from **Suenbrough**, in **Shetland**, the course is S. S. W.  $\frac{1}{2}$  W. 46 leagues.

Between **Duncansby Head** and **Kinnard's Head** lies the North Frith, in the bottom of which lie the two Friths of **Murray** and **Tain**. In the **Murray Frith** are two good harbours, viz. **Cromarty** and **Inverness**.

The coast of **Caithness**, from **Duncansby Head** to the **Ord**, lies S. W. by S.  $\frac{1}{4}$  S. near 8 leagues distant; between which are not any harbours to shelter vessels, except the **Water of Wick**, and that only for those which are small, and they will be in danger with an easterly gale of wind.

**Sinclair-Bay**, in all parts, has clean ground, where ships may stop a flood, when they are, the next ebb, bound through the **Pentland Frith**; which may also be done in **Preswick-Bay**.

From **Duncansby Head** to **Tarbartness** the course is S. W. by S. and S. W.  $\frac{1}{2}$  S. 14 or 15 leagues. To the N. W. ward of **Tarbartness** is a deep bay, in which is good anchorage for all but an E. or N. E. wind. Five or six miles N. W. from **Tarbartness** lies the **Bar of Tain**, upon which is not above 4 or 5 feet water; and, being a very wild place, it is necessary to take a pilot, if you are bound up to **Tain** or **Durnock**.

The **HARBOUR of CROMARTY**. From **Tarbartness**, S. W. by W.  $4\frac{1}{2}$  leagues, lies the harbour of **Cromarty**. The coast between both is clean and bold, except some small rocks, called the **Three Kings**, that lie near midway, and are always above water,  $\frac{1}{4}$  a mile from the shore.

**Cromarty**, in its entrance, is nearly a mile over, deep water and clean on both sides, (except close to the South point, where lies a small rock, called the **Shur**,) so that you have nothing to fear, nor any want of marks to run in by. After you are in, you may shoal your water to what depth you please on either side; but the best anchorage is near the South shore, just within the entrance

entrance, in 7 or 8 fathoms. In the entrance of the harbour you will have from 35 to 22 fathoms.

From this to Inverbreechy-Ferry is 5 miles, where you will have 15 fathoms; and for the next 5 miles it shoals gradually till you have no more than 5.

The town of Cromarty stands upon the South shore, just in the entrance of the harbour. The harbour of Cromarty lies from Kinnard's Head W. N. W. 20 leagues, and is by far the best harbour on the East side of Great-Britain, or perhaps in all Europe.

Inverness lies to the southward of Cromarty about 5 leagues; but, if you are not well acquainted, it is best to take a pilot at Cromarty.

Findhorn lies from Cromarty S. E. by S. 4 leagues, upon the South side of the Frith, and is only a small tide-haven.

The South side of the North Frith lies along shore from Fort George, at the entrance of Inverness, E. by S. 8 leagues to Burgh-Head: from which to Kinnard's Head E. S. E. 13 or 14 leagues. The shore is all clean, except that about 2 leagues to the eastward of Burgh-Head lies a ledge of rocks, called Helman-Scars. Eight fathom is close to them; but, in running up the Frith, come no nearer to the shore than 20 fathoms in the night.

S. S. E. 4 miles from Kinnard's Head lies Rattray Head; from which, 1 mile into the sea, E. lies a ledge of rocks. Come no nearer the shore than 13 fathoms; or, if you keep Moor-Mount above the land or sand-downs of Rattray-Head, you will go without them. Moor-Mount is a remarkable high land, which stands in-land from Peterhead, and will be seen, in clear weather, 10 or 11 leagues from the shore. It has the appear-

ance of a saddle, if seen between the S. W. by W. and W. by N.

Near 2 leagues S. S. E. from Rattray-Head lies Chalk-Inch, within which is the little town of Peterhead, with only a dry harbour for small vessels. Ships, that are bound to the northward, with N. W. winds, may anchor, to the southward of Chalk-Inch and Peterhead, in 8 or 9 fathoms water; but must be upon their guard against an outerly wind.

Three or four miles to the southward of Chalk-Inch lies Buchan-Nefs. The course from which to Flamborough-Head is S.  $\frac{1}{2}$  W. 66 or 67 leagues; and to St. Abb's Head S. W.  $\frac{1}{4}$  S. 50 leagues; but, to Girdle-Nefs, on the South side of Aberdeen-Bay, the course is S. W. by W. 8 or 9 leagues; between which the shore is all clean; and about mid-way lies the small town and creek of Newburgh.

ABERDEEN-BAY. Just round to the northward of Girdle-Nefs lies Aberdeen-Bay, which is a good road for off-shore winds. You may anchor here in 8 or 9 fathoms water, Girdle-Nefs bearing S. by W. or S. S. W. If you are bound into the harbour, wait in the road for the assistance of a pilot and a boat, as the harbour is very difficult to enter, the channel shifting very often. One mile to the northward is the small town of Old Aberdeen.

Off Girdle-Nefs, at a small distance, lies the Girdle, a small rock. From Girdle-Nefs to Tod-Head the course is W. S. W. 7 leagues; between which are several small towns, but none of note, or where you can anchor, except Stonehive.—The North point of the bay is called Cowie-Nefs, (but best known by the name of the Garron-Head,) but is foul and rocky up to the little fishing-town of Cowie, lying on the North side of



*Directions from the Pentland Frith to the Frith of Forth.*

of the bay. From Cowie-Nefs, over the bay to Downie-Point, is nearly  $\frac{1}{2}$  a league. In the bottom of the S. W. side of the bay is the town and pier-harbour of Stonehive. In the pier, upon a spring-tide, you will have 16 or 17 feet, and upon a neap 10 or 11. But, with the wind outerly, at E. or N. E. there is a great run of the sea in the pier, without which lies a ledge of rocks. Just without the pier you may anchor in 3 or 4 fathoms, clean ground; but the Bufs is foul ground. Without the Bufs, in 8, 7, or 6, fathoms, is clean ground, clay and sand. But a ship, that only intends to stop a tide, will find the best road  $\frac{1}{2}$  a league right off, in 14 or 15 fathoms.

About a mile to the southward of Downie-Point is Dunnoter-Castle, which is built upon a rock, and joined by a narrow neck to the main. This castle is easily known by the fine and noble appearance it makes to seaward, between which and Downie-Point is a high rocky headland, called Bowden-Nefs.

From Stonehive (or Downie-Point) to Tod-Head the distance is 7 or 8 miles. Tod-Head is not easily known at a distance, being low and rocky, but steep-to, and not in the least remarkable; so that the high hill of Craig Davie, which stands to the northward of Inverbervie, is generally taken for it, and so marked in the log-book.

Scurdie-Nefs, the South point of the entrance into Montrose, lies from Tod-Head W.  $\frac{1}{2}$  S.  $3\frac{1}{2}$  leagues, and from Red-Head N. N. E. 5 miles.

Montrose is a place of much trade, but not to be attempted by a stranger without a pilot, as the tide runs very rapid in and out, (i. e. at the rate of 5 miles per hour spring-tides,) the channel being also very narrow; and the Annet, which shoots off from the North shore  $\frac{1}{4}$  of a mile into the sea, with several banks, making it extremely dangerous for a stranger to attempt. Scurdie-

Nefs is not clean, for from it more than a cable's length lie the rocks, called the Instone and the Outstone; come not any nearer the Nefs or Outstone than 6 fathoms water. The best anchorage in the road is the town-steeple (which has a spire) in one with Turin-Hill: there, from 9 to 7 fathoms water, the ground is clean, but more to the southward it is foul and rocky. The town stands upon the North side of the river, about  $1\frac{1}{2}$  mile above the entrance. Here the water rises near 4 fathoms, and flows, full and change,  $1\frac{1}{2}$ .

Between Scurdie-Nefs or Montrose lies the bay of Lunan, which has for the most part clean ground, where ships may ride, with an off-shore wind, a mile or a mile and a half to the northward of Red-Head, in 8, 7, or 6, fathoms.

Read-Head is a land very easily to be known, being high and rocky, with red cliffs. Thwart the head a very strong tide runs, both ebb and flood, which soon causes a great sea, with a weather-going tide. Within a mile of the shore you will have 20 fathoms water, but it is the best depth running up this coast from Buchan-Nefs. Where the stream runs in a parallel direction with the shore, it is best, in the night or hazy weather, to keep out in the depth of 28 fathoms, and not come within that depth.

Red-Head and Fife-Nefs, which bear from each other S. S. W. westerly and N. N. E. easterly, better than 5 leagues, are the two extremes of the Frith of Tay; in the bottom of which, inland, runs the river of Tay, commonly called Tay-Water, or the haven of Dundee. The entrance of this river lies from Red-Head S. W. 3 leagues, and from the Carrock (a mile without Fife-Nefs) N.  $\frac{1}{2}$  E.  $3\frac{1}{2}$  leagues. On each side of the entrance into Tay-Water lies a very dangerous sand. That, which stretches

stretches off S. E. nearly 3 miles from Button-Nefs, is named the Gaa; it is a very dangerous sand, about  $\frac{1}{2}$  a mile broad, and ebbs dry till you come near the point, where there there is 8, 10, and 12, feet at low water.

On the other or South side from Tentismuir-Nefs, E. S. E. 4 miles, runs the Abertay, a sand equally as dangerous as the former, being both steep-to within-side, but they are flat at the back. The entrance is near two miles over.

But within these two lies a bar, called the Cross-Sand, where, at low water, towards the Abertay, is 2,  $2\frac{1}{2}$ , and 3, fathoms farther to the northward towards the Gaa, and is at least half a mile over. Coming in from sea, the water shoals gradually, from 8, to 6, 5, 4, and 3, fathoms; but, you are no sooner over it than you fall into 5 and 7, and soon after into 9, fathoms water. To sail in, bring Button-Nefs N. N. W.  $\frac{1}{2}$  W. and keep it so till you have the two light-houses (which stand upon the point under the hill, or downs) on with each other; run in thus, and it will carry you safe in by day or night. Or, bring the old Tower, called Broughty-Castle, within a sail's breadth to the Northward of Dundee-Law, and it will be a very good mark in or out.

Button-Nefs is remarkable by some red sand-downs. The other parts are low, sandy, and clean. At best, it is a bad and dangerous harbour for a stranger to take into in bad weather, as there is a breach right across, with a weather-going tide. Therefore, if possible, wait till the flood is well made, and, when over the Cross Sand, come no nearer the Gaa than 5 fathoms, or to the Aberty than 6. This depth must be observed in turning as well as in running up. But, if you are obliged to take the harbour with an ebb tide (which runs strong) and an outerly wind,

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reduce your after-sails, that your ship may be ready to wear from either side, if she should take the tide upon the bow.

Between Button-Nefs and Abertay is the narrowest part of the channel, about  $\frac{1}{4}$  of a mile over, and 6 or 7 fathoms mid-channel; but, when you are above Button-Nefs, come not farther northward than 3 fathoms, by which you will avoid Drumlaw-Sand, which lies off the church and village of Money-Frith.

Upon the Cross-Sand, and up as high as Dundee, it is high water, full and change,  $\frac{1}{4}$  past two, and the tide upon the Cross-Sand 18 feet.

To the southward from the Abertay, round Tentismuir Nefs, and up as high as the South Ferry, it ebbs dry a long way off; and the channel lies close by the Mussel-Scars, which lie upon the outer edge of the bank at low-water mark. Here is not above 3 or 4 fathoms at low water, and a strong tide, occasioned by the Horseshoe, which runs off E. S. E. from Broughty towards the easternmost scar, and has not above 8 or 9 feet upon it, though steep-to; on both sides 8 or 7, and near Broughty 14, fathoms.

The channel is not above  $\frac{1}{2}$  a mile wide between the Horseshoe and the South Bank.

From Broughty up to the ferries you have deep water, 11 or 12 fathoms, with a strong tide. You may anchor from 7 to 9 fathoms off the W. end of the town of North Ferry, and off South Ferry in 5 or 6, the town bearing S. Here you will have clay ground. From this up to Dundee is W. or W. by N. more than 3 miles, the channel clear and broad, except the Newcome, (near the Gurpits,) a small sand, which lies about a mile above the South Ferry, and falls dry at low water, but has 6 fathoms just without it to the northward. To avoid it, give the South

shore



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shore a birth of  $\frac{1}{2}$  a mile or more. Above the ferries, the channel shoals, by degrees, from 9, to 7, 5, 4,  $3\frac{1}{2}$ , and 3, before the town: the best road is off the W. end of the town, in 3,  $3\frac{1}{2}$ , or 4, fathoms, clay ground. The pier-harbour of this town falls dry at low water; but, on spring-tides, at high water, there are 14 or 15 feet, and upon a neap 9 or 10. From this, vessels of 6 or 8 feet go up to Newburgh and Perth, or John's Town.

INCH-CAPE, or the CAPE-ROCK. Inch-Cape, or the Cape-Rock, lies before the Frith and River of Tay; and, being the most dangerous rock upon the East coast of Scotland, it is the more to be guarded against. It bears from the May-Light N. E.  $\frac{1}{4}$  E. 17 miles, from Fife-Nefs N. E. by E.  $\frac{1}{2}$  E. 4 leagues, from the entrance of the river Tay S. E. 12 miles, and from Red-Head S. S. E. 10 miles. But, if it be so clear that all these lands are to be seen, the marks upon the shores are more to be depended upon than the compass; therefore observe that it lies with the island of Bass just appearing to the northward of the North declivity of May-Isle, the college-steeple of St. Andrew's on with East Lomond, and the Pot on with Dick's Mount, a round hill within land above Abroth. The Pot is a remarkable hollow cliff, a mile to the N.E. ward of Abroth, and just to the southward of Lour-Head. If you are without the rock, in the night or thick weather, come no nearer to it than 32 fathoms, and, if within it, than 12. This rock is large and near a mile long; it falls dry at about 4 hours ebb, and is covered again at about 2 hours flood, but has a ledge, which runs from it into the S. W. that is only seen at low water. Close to this rock, on the inner side, is 4 fathoms, and 6 a little farther to the westward. Close to it, without side, is 7 fathoms; 16 a cable's length off, hard ground; and 27 or 28 at  $\frac{1}{2}$  a mile distance. In the day,

come no nearer to it than this depth. The Bass, open to the eastward of the May Island, leads you without it.

The Frith of Tay is generally clean ground, except near the shores and between the Cape-Rock and Abroth, where the ground is mostly foul.

The best road to anchor in St. Andrew's Bay is, the church-steeple on with Drumcarlow Craig, and the harbour S. W. in 6 or 7 fathoms, fine sand.

The Car stretches out N. E. at least 1 mile from Fife-Nefs, and is covered at  $\frac{1}{2}$  tide. Nine fathoms is close to it, being steep-to on both sides; and to the northward of it, a cable's length, is 11 fathoms, hard ground. But, if you keep the tower of Crail so far above the land that the spire and part of the steeple are to be seen, you will be to the eastward of the rock. In the night come no nearer than 16 or 15 fathoms water. When you are thwart the rock in a fair way, the light house upon the May will bear S. S. W.  $\frac{1}{2}$  W. distant 7 miles.

The Frith of Forth is that arm of the sea that lies between Fife Nefs and St. Abb's Head, which bear from each other N. and S. better than 7 leagues. When you are off the Frith of Forth, and bound to Leith-Road, if you are to the northward, with a northerly wind, you must keep to the northward of the Isle of May, between which and the Fife shore the distance is  $4\frac{1}{2}$  miles. When you are 2 or 3 miles to the southward of Fife-Nefs, your course up to Ely is W. by S. and W.  $\frac{1}{2}$  S. 10 miles; and, from thence up to a fair birth between Kinghorn and Inch-Keith, the course is W. 14 miles farther.

But, if you are to the southward, and off St. Abb's Head, your course up to the Island of Bass is N. W. by N. 13 or 14 miles; after which, your course up the Frith to Largo-Bay is N. W. by W. 12 miles, then W. 8 or 9 to Inch-Keith. But,

But, if you are mid-channel between the islands of Bass and May, (which bear from each other N. E. and S. W. 7 miles,) your course is W. by N.

The distance between Kinghorn-Nefs and Inch-Keith is about 2 miles, S. by E. all clean and deep water, 19 and 20 fathoms mid-channel.

**LEITH-ROAD.** Leith-Road lies right off Newhaven, on 5 or  $4\frac{1}{2}$  fathoms, clay ground, the town of Leith S. W. by S. You may also anchor in 7 fathoms water, with the Hound-Point midway between the islands Crammond and Mickrey. But you must observe, that, coming from Kinghorn-Nefs to this road, there is a very dangerous ridge of rock for ships that go much water: this rock lies within Inch-Keith, is a mile long, and has not above 12 or 14 feet water upon it; but between it and the island is 5 fathoms. Keep Largo-Law a sail's breadth open of Inch-Keith, or Mickrey-Stone on with Inch-Garvey, or the Hound-Point, and it will lead to the northward of it; and, when you have Neghaven in a line with the East part of Edinburgh-Castle, you are to the westward of it; and, North-Berwick Law on with the long, low, black, island-rock, called Long Craig, you are abreast of it. In this road moor N. and S. though it is but an indifferent winter road-stead.

Bound out of the Frith to the southward, from the Bass to St. Abb's Head, is S. E. by S. 13 or 14 miles, between which is the town and harbour of Dunbar, before which, at 1 mile distance from the shore, you may anchor, with off-shore winds, in 7 or 8 fathoms, clean sand.

From St. Abb's Head, S. by E. 15 miles distant, is the haven of Berwick; between which lies the small tide-haven of Haymouth; but, from St. Abb's Head to the Staples, upon which a

light is kept, it is S. E. by S. 11 miles. Come no nearer the Staples than 30 or 35 fathoms, and from the Staples to Tinmouth-Bar 13 leagues, that is, from the Staples to Cocket-Islands S. by W. 20 miles, and from the Cocket to Tinmouth-Haven S. 7 leagues.

But, if you are off the Staples, and bound to the southward of Flamborough-Head, steer E. S. E. easterly 36 leagues, which will run you into a fair birth off the head; but, with a westerly wind, it is most adviseable to hold the land on-board, or at least to haul in for the coast of Yorkshire, at Huntcliff or Whitby.

Tinmouth-Haven is known by the castle which stands upon the North side, and in the night by a light which is there kept. — You may anchor under the castle in 7, 8, or 9, fathoms water, from whence you take a pilot over the bar.

About 3 miles to the southward is Suter-Point, which, respecting the land in-shore, is low, but a cliff, and steep, not having any foul ground lying off from it.

**SUNDERLAND.** S. by W. 4 miles from Suter-Point lies Sunderland, where ships lie almost dry at low water, except in particular places. The bar often shifts; for which reason, it is adviseable to take the assistance of a boat into the harbour, which is not convenient for any ship above 12 feet draught of water.

From Tinmouth-Castle to Flamborough-Head the distance is 28 leagues S. S. E.  $\frac{1}{2}$  E.

From Sunderland to Hartlypool the coast runs N. and S. 5 leagues. Hartlypool is a pier-haven for small ships, which ebb dry at low water. In running for the pier, from the northward, keep the Steepleman high above the cliff, leaving the beacon on the starboard side, and then haul in for the pier; but, you may anchor between the Scars and the pier in 5 fathoms water.

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The River TEES. If you are bound into the river Tees, and are to the northward, endeavour to keep the West end of Barnaby-Moor S. S. W. or the Gulley-Heads a sail's breadth open; or a mill, which stands upon the high land in the bishopric of Durham, on with Stranton-Church: these will bring you in sight of the beacons or the first buoy. These beacons stand on the South side of the channel, and, when on, bear S. W. and will run you to the outer buoy, which lies upon the best of the bar. But, in coming from the southward, keep a remarkable hill, which stands near the southernmost extremity of the high land in Durham, and is called Elwick-Beacon, on with the middle of Seaton, till you are past the Scars, which lie N. W. 2 miles from Redear; then bring the said hill on with the South end of Seaton, which will lead to the outermost buoy, and Stranton-Church will be between the two mills that stand to the northward of Seaton.

The first buoy lies in mid-channel, therefore may be left on either side; the second, third, fourth, and fifth, buoys you may leave to the northward of you; and the sixth to the southward, where you may anchor in 10 or 11 feet at low water. If in bad weather, with an easterly wind, you can get within the northernmost sand, called the Gare, you may make free close to the breaker, it being keep-to; but, if any of the buoys should be gone, and you can see Stockton-Church, keep it a small ship's length open to the northward of the Holm-House, which is remarkable, and upon the Durham side. This mark will run you in safety above the third buoy, where you may anchor in 12 feet at low water. After you are above the third, you may run to the fourth; then keep the North shore on-board, and come to an anchor, in the hole under Seaton-Snook, in 12 feet at low water,

and moor with a stream-anchor, and a cable carried out upon the shore.

Upon the bar is 7 feet at low water, and it flows half past 3, full and change; the spring tides rise 16, and the neaps 10, feet. You may anchor in 8, 9, or 10, fathoms, clean ground.

WHITBY. Whitby is a pier-haven, and ebbs almost dry. — Before the pier lies a sunken rock from it N. E. nearly 1 mile distant. If you keep the harbour open, that is, if you see the high land above Whitby between the houses which stand on each side the harbour, you will go to the northward of it; but observe to take as much time of tide as possible, and be careful to steer right in for the N. W. pier, as the tide of flood sets strong across the harbour. Coming from the southward, keep the North cheek of Robin-Hood's Bay open, which will lead you just without the rock.

If it blows strong, and you are bound for the harbour, if a flag is hoisted upon the North cliff, you may venture in with safety; but if, at the same place, a fire or smoke is raised, you must, if possible, get an offing, as the haven is then not to be attempted, but in case of extremity. Avoid getting on shore to the southward, which must inevitably prove fatal; whereas, if you go on shore to the northward of the piers, you will in all probability save your lives, and possibly your ship, especially if you go on shore near or just after high water.

From Whitby to Scarborough the course is S. S. E. 5 leagues. Between 4 and 5 miles southward of Whitby lies Robin-Hood's Bay. You may anchor under the North cheek of the bay, to stop a tide, in 8 or 9 fathoms water; but it is not a place to trust a ship in long, especially in the winter.

SCARBOROUGH. Being bound into Scarborough, you may

may run close under the cliff, upon which the castle stands, until you open the piers. Run close round the end of it; and, at  $\frac{1}{2}$  flood or  $\frac{1}{2}$  ebb, you may run your ship on shore upon the sand; but, if the wind be far to the northward, avoid the rocks, which lie a considerable distance from the shore to the southward of Spa-House, and are dry at low water. After you have taken the ground, run out your ropes to the Dolphins, or piers; but, in strong northerly winds, it will be necessary to get your cable-ends out, as the drawback of the sea runs exceedingly violent. You may anchor in Scarborough-Wick in 5 or 6 fathoms, but it has often proved fatal. Scarborough is a bad outlet, being bound to the northward.

From Scarborough to Flamborough-Head the distance is 5 leagues S. E. by S.  $\frac{1}{2}$  S. Between Scarborough and Flamborough lies Filey, which is only used by fishing-boats. If you are bound over the Well, with the wind at S. W. or W. S. W. and get up to the head the latter part of the flood, you had better anchor under Speeding Cliffs, or hold your ground by keeping your ship under way in the contra-tide, which runs under the head; for, if you attempt to go round, the tide of ebb, setting out E. N. E. from Burlington-Bay, will set you several miles to leeward before low water.

Being bound down to the northward, and the wind taking you short below the head, you may go into Burlington-Bay, and anchor in 5 or 6 fathoms water, with the street at Burlington-Key open, where is the best ground in the bay, most part of which is foul and bad for the cables.

Without the bay lies a sand, called the Smithick, the N. E. part of which is  $2\frac{1}{2}$  miles S. W. from Flamborough-Head; the most shoaly part of the sand having not above 10 or 12 feet water

upon it: it bears S. E. by S. from the pier. The S. W. end lies S. by E. 3 miles from Burlington-Key.

You may go out of the bay to the westward of the Smithick. Between the inner end of the sand and the main you will have 5 or 6 fathoms, it being about two miles broad; and you may stand towards the main to what water you please, the soundings being very regular. Between the head and the N. E. end of the Smithick is 7, 8, and 9, fathoms water.

The HUMBER. If you are bound into the Humber from the northward, and are as high up as Flamborough-Head, then your course to the Sporn is S. 10 leagues distant. The coast of Holderness from the Smithick is all clean, and regular soundings, (except off the sister-churches, where is a hole of 8 or 9 fathoms close-in,) till you get up to the over-fall, which lies to the northward of the Humber; so that, when you come up as high as Kilnsea, be careful to keep without the New Sand, which lies  $1\frac{1}{2}$  mile from the shore, and is sometimes dry at low water, and the body bears E. S. E. from the light-house. You will avoid this by keeping the North part of Drimlington open in 6 or 7 fathoms water; and, when you come into 10 or 9 fathoms, you are in the opening of the Humber, and may haul in for the Sporn, giving the point a good birth, as 5 fathoms is close to the stone banks.

If you intend to anchor in the Hawke, which is the best road for N. E. and easterly winds, bring the point to E. S. E. or S. E. by E. or the small light open a sail's breadth to the eastward of the great light, then anchor in 5 or 6 fathoms at low water; for here it rises from 12 to 19 feet upon a common tide, and, upon spring-tides, 26, 27, or 28, feet.

But, if you have the wind so far to the northward that you are obliged



obliged to work in, you will find, between the over-falls and Sandhale, (upon the Lincolnshire coast,) 9, 10, and 11, fathoms in the channel; toward the over-falls are very irregular soundings, 4, 5, and 6, fathoms; but, toward Sandhale are regular shoals, 5, 4, and 3, fathoms. Standing to the south-westward, stand not too far over, lest you get to the southward of the Bull, which lies  $1\frac{1}{2}$  mile south-west from the lights.

But, if you are to the southward of the Humber, and put back for a road, or bound up to Hull, you will observe the distance you are from the Sporn; after which the following remarks are necessary:

The SPORN. At the Sporn, full and change, it flows  $\frac{1}{4}$  past 5; at Sandhale at 6; but, in the offing, at the distance of 7 or 8 miles, it flows at  $\frac{1}{2}$  past 7 o'clock.

The flood runs across the mouth of the Humber  $\frac{3}{4}$  of an hour before it bends in; after which it sets across towards the Lincolnshire coast, W. S. W. till you bring the Sporn lights N. E. then it runs to the N. W. and N. by W. into the Hawke, and sets directly upon Trinity-Sand.

N. B. The ebb tide comes down in the Hawke some considerable time before it is high water on the shore.

If you are near the floating or Dudgeon light, steer N. W. then your distance from the Sporn will be 12 leagues. Observing the flood setting to the S. S. W. and S. W. by S. into Lynn-Deeps, and the ebb the contrary, you will have from 10 to 15 fathoms, but irregular soundings, till you come near Sandhale; but, be careful you do not get to the southward of it, as, near Saltfleet, it is steep-to upon the Lincolnshire coast.

But, in running into the Humber, you must not borrow too close upon Sandhale, without you have the wind in the S. W. quarter, as the N. E. hook lies far off, and could not, with a

flood tide, be weathered with a S. E. wind, if you are running along it in 5 or 4 fathoms. When Grimsby-Church is on with Clea-Church, you are to the northward of it; but, if you get sight of the light-houses, keep them N. W. or N. W. by N. till you are within a league of them, then into W. N. W. or N. W. by W. (they bearing, when on, N. W. by W.  $\frac{1}{2}$  W.) allowing for the tide, as before observed, and you will run in between the Sporn and the Bull.

Upon the East side of the Bull is laid a red buoy, bearing from the light-house S. W.  $1\frac{1}{2}$  mile, and Clea-Mill on with Clea-Church is the leading mark to the buoy; but the Bull is greatly worn away since the Middle in the Humber is grown up.

After you have passed the Sporn with a southerly wind, and intend to anchor, then the best place will be Grimsby-Road. Observe that, after you have passed the buoy of the Bull, run up N. W. in six or seven fathoms along the sand. This sand is about  $1\frac{1}{2}$  mile long, between which and Clea-Nefs is a channel of about 1 mile in breadth, which has about 3 or  $3\frac{1}{2}$  fathoms of water in it.

After you are above the buoy of Clea-Nefs, (which is black,) steer up toward the black buoy of the Burcome, N. W. by W.  $\frac{1}{2}$  W. 3 miles. About a mile below the buoy, and  $\frac{1}{4}$  a mile without it, is good anchorage, in 5, 6, or 7, fathoms water, in Grimsby-Road; but small vessels ride below, and in the stream of the Burcome, in 16, 12, and 10, feet at low water.

If it be in the night, keep the lights a large sail's breadth open to the southward, which will carry you up into the road.

Steering these courses, you will leave the white buoy of the middle to the northward of you. This buoy lies in 3 fathoms water, Patrington-Church N. by E.  $\frac{1}{2}$  E. Grimsby-Church W.

By

by S. Upon the lower part of the middle is only 8 feet at low water.

Intending to go up to Whitebooth-Road, when you are up to the buoy of the Burcome, which lies in 16 feet, and Grimsby church and mill in one, you will steer N. W. keeping in 5 or 6 fathoms, towards the lower part of the sand; but, as you come higher up, shoaling to no less than 8 or 7 fathoms, the leading-mark up is Killingholm-Church, open to the northward of the mat-kiln, (which is a large red house on the Lincolnshire coast,) till you get as high as Stalingborough-Flats, which are steep-to, and lie about  $\frac{1}{2}$  of a mile from the shore, and run up above the kiln. The mark, for the upper part of them, is Patrington-Steeple open with the upper end of the Sunk; after which the channel runs close over to the westward in Whitebooth-Road: so that, being above Stalingborough-Flats, run up W. N. W. in 12 or 14 fathoms, till you get above the white buoy of the Foul-Holm. The leading-mark through, between Stalingborough-Nefs and the Foul-Holms, is Linnigham-Church upon the shepherd's house, on the Lincolnshire side. After you are above the buoy of the Foul-Holm, and brought Grimsby-Church on with the kiln, you may keep them on, steering N. W. by N. and N. N. W. up to Whitebooth-Road, where is good anchorage in 5 or 6 fathoms, having Patrington-Steeple on with a remarkable tuft of trees, called Salt-Rush, and Grimsby-Church a large sail's breadth open to the westward of Stalingborough-kiln. Working up, you may open the church with the kiln each way a ship's length. There is a shoal upon the South shore in the Bright, which lies close in, and has 10 fathoms water close to it.

In Grimsby-Road, it is proper to take a pilot, if you are not acquainted, especially as the tides, upon the springs, are so ex-

ceedingly rapid, that, if a ship touch upon Skitter-Sand or the Foul-Holm, she is in the greatest danger of up-setting as soon as she comes upon the ground.

In working or running up, be certain that you go the southward of the buoy of the Foul-Holm, as the tide sets strong into a deep bight in the sand below the buoy; and, if you cannot drive to the southward in little winds, let go your anchor immediately.

After you are above the buoy of the Foul-Holm, and bound up to Hull, follow the preceding directions until you open Paul-Town to the westward of Paul-Cliff, which will run you up along-side the Foul-Holm. In the channel you will have 9 or 10 fathoms; but, upon the middle ground which lies to the eastward of Whitebooth-Road, is only 15 or 16 feet water, and, between it and the East side, 3 or 4 fathoms. Above Whitebooth, and nearly half-channel over, is a flat of 10 or 12 feet water; for which reason, it is better to take 1-third flood before you weigh out of Whitebooth-Road, (if at an anchor;) then run over to the eastward until you open the street at Paul: steering North N. by E. or N. N. E. about 4 miles, your depth of water will be 4, 5, and 6, and, a-breast of Paul-Cliff, 7, fathoms, where, close in, is Paul-Road, which is the worst in the Humber, the tide running rapidly, the ground very hard, and not good anchoring.

After you are in Paul-Road, steer round the Skitter-Sand N. N. W. and N. W. observing, at the same time, to keep Marfleet-Church a ship's length open of Marfleet-Jetty to the eastward; and, when the southernmost house in Paul-Town is on with the Jetty, keeping them so until Marfleet Church and Jetty come in one; then will the windmill, near the lime-kilns



at Hull, be just open with the Jetty at the West end of the town, which is the leading-mark up to Hull-Road. In the channel, from Paul-Road almost up to Hull-Road, you will have 9 or 10 fathoms water.

In working up, after you are round the point of Skitter-Sand, stand to it in 6 or 5 fathoms; but, towards the North shore, or flats, (which lie a long way off,) no nearer than 8 fathoms, which is close to; and, as both ebb and flood set strong upon them, it is very difficult to get the ship afloat again, should you touch the ground.

**HULL-ROAD.** You anchor, in Hull-Road, just a-breast or below the garrison, in 6 or 5 fathoms water; but, bound into the harbour or dock, if it be a flowing tide, run on-shore at the garrison (or dolphin) point, and make all clear for warping in.

But if, in coming from the southward, you should get at the back of the Bull, when bound into Humber, (which often happens in thick weather,) you will have 6, 5, and 4, fathoms. Course up N. W. until you come to the upper end of the Bull, between which and Clea-Nefs is a broad flat channel of about 20 feet water: the course through is North, N. by E. or N. N. E. — Through this channel the flood sets to the northward, and the ebb the contrary. Being to the northward of Clea-Nefs, proceed as before directed.

Beside the before-mentioned roads, there is good anchorage in the Humber, under Sunk-Island, in 6 or 7 fathoms water, Humberston-Church on with Clea-Mill; and, higher up, with Patrington on with the middle house upon Sunk-Island.

From **FLAMBOROUGH-HEAD** to **FOUL-NESS**. From Flamborough-Head, being bound to Yarmouth-Roads, your course to the Dudgeon-Light is S. by E.  $\frac{1}{2}$  E. 19 leagues, making allowance for the tide, the flood setting in to the S. W. and

the ebb to the N. E. But, from the Sporn to the light, the course is S. E. 12 leagues, and from thence to Foul-Nefs S. by E. 7 leagues.

The Inner Dowling lies from the Sporn S. S. E.  $\frac{1}{4}$  S. 7 leagues: the North end has Ingoldmeals W. S. W. or Burgh-Church on with the church of Addlethorp; and from the South end it bears West, and is 9 miles distant from the shore: upon it are about 6 or 7 feet at low water; within it, and all along the Lincolnshire-coast, it has very irregular soundings, 6, 7, or 8, fathoms, with many shoal over-falls.

The North part of the Outer Dowling lies from the Sporn-Point E. S. E. 10 leagues, from Flamborough-Head S. E. by S. 16 leagues, and from the floating light upon Dudgeon-Shoal N. N. E. 5 leagues: upon this part are not above 2 fathoms water; from whence stretch S. S. E. 2 leagues, deepening from 2 to 4, 5, 6, and 7, fathoms at the South end, which bears from Cromer N. by E.

Four miles within the North end of the Outer Dowling lies a bank, which has no more than 3 fathoms water upon it. It lies E. S. E. from the Sporn-Point, 26 miles distant.

**LEMON and OWER.** From the Dudgeon-Light to a birth without the Lemon and Ower, the course is E. by S. 11 leagues. The outer part of the Lemon and Ower bears E. by N. 10 leagues from Foul-Nefs, then South 9 leagues to the southward of Smith's Knowl.

In running over from the Head, in a fair way, you will have 18, 16, 17, 14, fathoms, regular soundings, (p as high as Humber, after which you will have from 10 to 15 fathoms uncertain soundings, and in some places meet with over-falls of 4 or 5 fathoms; but, after you get above the Dudgeon, you will deepen

deepen the water to 16, 17, or 18, fathoms. Keep within 16 fathom; if in the night-time, lest you get upon the North end of Haseborough-land, which bears S. S. E.  $\frac{1}{2}$  E. 9 leagues from the Dudgeon; and come no nearer the coast of Norfolk, between Blakeney and Foulness, than 16 fathoms.

North from Cromer 4 or 5 miles lies Sheringham-shoal, which has about 18 or 20 feet water upon it.

*Directions from FOULNESS out of HASEBOROUGH-GAT: also in through the COCKLE into and through YARMOUTH-ROADS; over the STANFORD, into HOSLEY BAY, and from thence out of the SLED, up the SWIN and River THAMES to LONDON.*

**T**HE course, in a fair birth, off from Foulness to Winterton-ness, is S. S. E. distant about 7 leagues; depth of water 10, 11, or 12, fathoms. In turning up you will find regular soundings upon the shore till you get to the thwart-light; so that, after you get above Foulness, (which is flat and rocky a considerable distance from the shore,) you may stand into what water you please, and off to 14, 15, or 16, fathoms, towards Haseborough-land, but no farther, as 18 fathoms is close on-board it.

The North end of Haseborough-land lies with Foulness bearing West three leagues distant, and Haseborough-church S. S. W.  $\frac{1}{4}$  S. The South end has a buoy upon it, as will be seen in the directions for the Gat.

The white buoy of the Dog-Heads lies with Winterton-mill nearly on with the fire-light, and Caister-church on with Caister-lights: it lies in  $4\frac{1}{2}$  fathoms water.

But, if you are running up the Woold, and cannot save light

through the Cockle, it is far better to go out of Haseborough-Gat, especially in the winter season, as it is dangerous to trust, in a long night, so near the Cockle.

Therefore, after you have brought Haseborough-church into the N. W. by W.  $\frac{1}{2}$  W. keeping it thus will carry you clear of the South end of Haseborough-land upon which is laid a black buoy, in  $5\frac{1}{2}$  fathoms. Winterton-church bearing S. W. and Haseborough-church W. N. W. after you have run out into 20 or 22 fathoms water, you are clear of, and without, the Newarp, upon the North end of which lie a red buoy, in  $\frac{1}{4}$  less 6 Martnam-church just open to the northward of Winterton church, bearing N. W. by W. Caister-lights just open to the northward, bearing W. and Yarmouth-church bearing W. S. W. (These buoys, during the time of the Yarmouth herring-fishery, are taken up; which fishery begins about four weeks before, and ends about six weeks after, Michaelmas.) Running out, you will possibly meet with several overfalls, upon which, at low-water, are not above 4, 5, 6, and 7, fathoms, water.

Going through the Cockle-Gat, upon the Cockle, or West side, are laid 3 black buoys; and on the East side are 2 buoys, viz. one on the Sea-heads, which is red, and another, which is white, upon the Scroby.

The marks for the first buoy of the Cockle, or buoy of the fair way, are Winterton-church and Small-light in one, bearing N. W. and Yarmouth-church one-third of a cable's-length open of the Point. The course to this buoy, from a fair birth off Winterton-ness, is S. S. E. Near this buoy you will have shoal-water, as 5, 6, or 7, fathoms.

The second buoy lies with Caister-lights in one, bearing W. S. W. The course from the first (or northernmost) buoy, H. called



called the buoy of the fair way, is South; but you must observe the tide in the Cockle, which runs with great rapidity: the flood sets strong upon Scroby, and the ebb upon the Cockle.

The third (or southernmost) buoy lies with Caister-lights bearing N. W. This buoy is erroneously called, by some, the buoy of the Barber; which sand lies within and above it, and must be carefully avoided, as it lies near half a mile distant from the shore. The course, from the second to this buoy, is S. by W.

The red buoy upon the Sea-heads lies nearly opposite the middle buoy of the Cockle, with Winterton-tower light and steeple on with each other.

The white buoy of the Scroby lies with Yarmouth-chapel on with the second northernmost mill upon Yarmouth-Deans, bearing S. W. by W. and Caister-church N. W. by W.

Turning through the Cockle, after you are up to the middle buoy, you have deep water towards the Cockle, but regular soundings towards the Sea-heads, until you come up towards the Scroby, where it is steep-to: stand to the Cockle in 10 fathoms; to the Sea-heads into 8 or 7 fathoms; mid-channel 11 or 12; but, towards the Scroby, put about the first shoal-cast, in working up, lest the tide, which runs strong over the sand, should set you upon it.

**YARMOUTH-ROADS.** Being through the Cockle, your course up to Yarmouth-haven is S. S. W. and thence to Lowestoff-ness S. by W. Thwart of Goriston is good riding in 5, 6, or 7, fathoms: in Corton-road is good riding with S. S. W. and S. W. winds: but thwart the white post, that stands upon the beach in Lowestoff North roads, is the smoothest riding with southerly winds; for which reason small vessels get up there if they possibly can, as it is exceedingly good holding-ground; but it is very narrow between the beach and the Home-sand.

In working up between Yarmouth and Lowestoff North road, stand off to 8 or 9, and in shore to 5, fathoms water.

Thwart of Lowestoff-ness lie several overfalls, which, as the tide sets strong over them, cause a great rippling; and against which, upon the Hook of the Home, is laid a buoy.

Being bound over the Stanford, run along-shore till you bring the lights within a sail's breadth of each other, then steer over towards the Home-head till you are near the black buoy, which you must keep just without you.

But, in coming over the Stanford, you must observe, the flood sets strong upon a shoal, or middle ground, in Lowestoff South road, upon which is laid a floating beacon: the flag-staff, at the South end of Lowestoff town, upon a gentleman's seat in the country, is the mark for it. The ebb sets strong upon the Home-head, the buoy of which lies with the High-light a small sail's breadth open to the northward of the Small-light. Upon the Stanford is about 17 or 18 feet at low-water, and the tide rises here about 6 or 7. The lights, when on, bear N. by W.  $\frac{1}{2}$  W. After you are over, keep cut till you get into 8, 9, or 10, fathoms water.

In Lowestoff South roads is good riding for ships bound downwards, in 4, 5, and 6, fathoms water.

**ST. NICHOLAS'S-GAT.** But, at present, the Stanford is very bad; it is much better to go out of St. Nicholas's Gat, in which you will have 4 fathoms water: it lies out nearly North and South about 4 miles, in which are placed 4 buoys, *i. e.* two black buoys to the southward upon Corton-sand, one white buoy upon the South end of St. Nicholas's-sand, and a red buoy upon the Cross-sand, the marks for which are as follow:

For the buoy upon the South end of St. Nicholas's-sand, the marks

mark and bearings are, Yarmouth-town jetty between the second and third southernmost mills upon Yarmouth-deans, bearing N. N. W. and Yarmouth-haven house open to the southward of the Pier, bearing W.  $\frac{1}{4}$  N.

The mark for the red buoy upon the Cross-sand is, Kessiland-church a large sail's breadth open of Lowestoff-neis, and Gorleston old steeple on with the old jetty.

The black buoy upon the North end of Corton-sand is laid by the following marks and bearing, (in  $\frac{1}{2}$  less 5 fathoms water.) Gorleston old steeple just open to the southward of Tavinier's houses, bearing N. W. and the white mill upon the deans just open to the westward of Yarmouth-church, N. by W. These two forementioned buoys make the entrance into the Gat, from out the roads, bound to sea, and lie from each other, N. by E.  $\frac{1}{2}$  E. and S. by W.  $\frac{1}{2}$  W. about three quarters of a mile distant.

But from the black buoy, upon the North end, to the black buoy, upon the S. E. part of Corton-sand, the bearing is South, 4 miles, and it lies in  $5\frac{1}{2}$  fathoms water: the marks for this buoy are, Kessiland-steeple a large sail's breadth open to the southward of Lowestoff-neis-point, bearing S. W.  $\frac{1}{2}$  S. or Lowestoff-light S. W. Lowestoff low light on with the westernmost tuft of trees, that stands to the westward of Kessiland-church. Hop-ton-steeple upon the South end of Blundestone-wood, bearing W. N. W.  $\frac{1}{2}$  N. and Yarmouth-steeple open to the second South mill upon Yarmouth-deans.

In sailing through this Gat observe the following directions; coming from the northward, with a fair wind, run so far out as to bring the Crane upon the jetty, between the second and third southernmost mills, bearing N. N. W. Run with those marks on, till you bring Gorleston new steeple on with the old jetty, which

lies to the northward of Yarmouth-Piers, bearing W. N. W. You are then in a fair birth, between the black buoy upon the North end of Corton-sand, and the white buoy upon the South end of St. Nicholas's-sand. Then with a flood tide, a S. E. course is good; but, with an ebb, steer farther to the southward, and, when you have the long marks on, as given in the bearings of the S. E. buoy, you are nearly clear, as you will soon drop into deep water. The leading mark out is, the new southernmost mill and Yarmouth-chapel in one: here the tide of flood sets out and the ebb into the Gat.

The turning marks out are, stand towards Corton-sand, till Gorleston is on with Tavinier's houses, but, after you have brought Lowestoff-church West, you may bring the old steeple on with the South end of the houses; but, standing towards St. Nicholas's-sand, be careful you do not bring the steeple open to the northward of them, especially in working in with an ebb tide.

After you are through the Gat, and fall into 16, 18, or, perhaps, 20, fathoms water, you may shape your course to the southward, till you are clear of the Home-head, then haul in, to 11, 10, or 9, fathoms, and run up according to the following directions.

Running up between Lowestoff and Orford-neis, come no nearer the shore than 8 or 9 fathoms; for in-shore lies, first, East-neis and the Barnard; secondly, Sizwell-bank and Thorp-neis; and, thirdly, the Newcome, or Onion, under Orford-neis.

The marks to go clear of the Barnard are, Lowestoff-church open with Pakefield-cliff till Southwold-church comes open with Easton-houses. (These are two houses which stand to the northward of Southwold upon the edge of the cliff.) Or, bring Co-thive-church (which is in ruins) on with the white house that



stands upon East-nefs; then you may haul-in for Sowl-bay. Come no nearer the Barnard than 8 fathoms water.

The marks to run clear of Sizwell-bank are, Blythborough-lodge (which is a large farm-house in a straggling grove of trees) open with Dunwich till you get Orford church and castle open of the South end of Aldborough; then you are clear of Thorp-nefs.

N. B. Blythborough-lodge has been mostly known to strangers by the name of the Saddle-back; but most of the wood has been lately cut down.

To keep clear of the Newcome, or Onion, keep Dunwich-cliff open of Thorp-nefs, and, when you get Baldsey-cliff open with Orford-beach, you are clear of it, and may haul-in for Hosley-bay.

But, if it be in the night, and the wind to the northward with a flood tide, being in 9 fathoms water, and the lights bearing S. W. by W. or W. S. W. haul-in to 8 or 7 fathoms water, lest the tide, which sets strong off the Nefs to the southward, put you without the stream of the buoy of the Whiting.

ORFORD-NESS. Working up from Lowestoff to Orford-nefs, stand off to 12 or 14 fathoms, but no farther; and toward the shore, to 9 or 8, the shoalings are very regular. But if, in working or running, you have Orford-nefs lights to the westward of W. S. W. you are in danger of Aldborough-knapes, upon which there are not above 12 or 14 feet at low-water; between which and the main there are 14 fathoms: and if you bring Orford-nefs lights to the southward of S. W. you are too near Thorp-nefs.

In Aldborough-bay is good riding with westerly winds, in 8 or 9 fathoms water, having Orford-nefs lights into the S. W. or S. W. by W.

The marks for the body of Aldborough-knapes are, Orford-church and castle on with each other, and Iken-church, (which stands some distance in-land,) upon the lime-kilas, which stand near the South end of Aldborough. Coming out from sea, if the church and castle be kept a sail's breadth open either way, you will shun them, the South end bearing from Orford-nefs lights E. by N.

If (when coming out from sea in the night) you should make Orford-nefs lights, (which, when on bear N. W. by W.  $\frac{1}{2}$  W.) you may, without any danger, if to the northward and a scant wind, bring them up into the W. and, if to the southward, into the N. W. by N. where, in about 5 fathoms, you will cross the tail of the Ship-wash, the North end of which lies with Orford-lights N. by W. Orford-town N. W. and Baldsey-church W. by N.

But, in coming-in with the lights on, you will have 16, 14, and 13, fathoms water: but from the Whiting down below the lights runs a middle ground. The nearer the sand the less the water; in 8 fathoms below the Nefs to 4 near the buoy; but within the said middle you will find 11, 13, and 15, fathoms water. Therefore, in the night, observe these soundings, lest you mistake, and get at the back of the Whiting.

HOSLEY-BAY. But, running up along-shore as before directed, being past Orford-nefs, the course into Hosley-bay is W. by S. and W. S. W. but, if the wind be scant northerly, you must haul a point more westerly: and if you have to work into the bay, come not any nearer the beach than 9 fathoms, till you are nearly up to the buoy of the Whiting, for from the Nefs upwards, about  $\frac{1}{4}$  of a mile, is shoal-water; near two cables length from the shore is hard rocky ground, upon the place where formerly lay

lay the Onion. This place has grown up, and must be avoided; 6 fathoms is close to it; you will have 5 fathoms one cast, and the next be aground. Come no nearer to it than 9 or 10 fathoms. Just above this is a strong contra-tide, (caused by the point above the lights,) which runs down with as great velocity as the tide of flood runs into the bay; by which several ships have been lost, having got their bow into the eddy, and by that means missed stays and run on shore before the wind, not having time to wear; and, the beach being very steep from the Ness wholly up to Orford-haven, the ships always luff-off, and in that manner are most commonly lost.

The marks for the N. E. end of the Whiting, upon which is laid a white buoy, are, Orford-mill open to the eastward of Orford-church, and Orford-ness high-light N. N. E. (N. B. The mill being to the eastward of the church, you may go clear out to sea.) The mark for the hook is, Orford-mill open to the westward of the castle; and, for the South end, Orford N. N. E. Hosley-church N. W. by N. and Baldsey N. W. by W.

Be careful of the Hook of the Whiting, as it lies within the stream of the buoy and is steep-to; between which and the main it is very narrow. Above the house and plot-boats upon the beach, about a mile and a half, begins a middle ground, upon which there is not above 20 feet at low-water; and it runs up as high as the entrance into Orford-haven: between which and the haven the soundings are very irregular and shoal.

Working up Hosley-bay, stand to the beach into 6 or 5 fathoms, and off to 7 or 8, but no farther, especially near the Hook, which, as before observed, is steep-to, having 9 fathoms close on board the sand: and if you keep the great-light N. E. by E.  $\frac{1}{2}$  E. you will run in a fair birth within the Whiting into Hosley-bay.

If you intend to anchor in Hosley-bay, run about a mile and a half above the house on the beach, and from thence up to Orford-haven is good anchorage in 7 fathoms water: but if you are high up, be careful you do not come too nigh in, as the ground is very loose inwardly, being only small stones with soft mud; but if you are off in 7 or  $7\frac{1}{2}$  fathoms, you have good clay ground, and have no cause to fear that your anchors should start.

If you should be in want of fresh-water, in fine weather, you may fill any quantity at an excellent spring upon Orford-beach. It lies about 400 yards from the beach side: the mark for finding it is, Orford-mill upon the chancel-end of the church.

The reason for my being so explicit, regarding Hosley-bay, is, that ships, sometimes, coming out from sea with strong gales at N. E. (when it has not been possible to float a boat to the northward of Orford-ness,) have gone to sea again, not being acquainted with the place, when they have had a good road under the lee. A boat can always float from Orford-beach with the wind at N. E. or N. E. by N. and the ship, getting a pilot on board, may run up the river, when, (as several instances have occurred in the winter season,) ships, that have gone to sea again, have, by the shifting of the wind and blowing hard, been forced to some port in Norway.

The marks for Baldsey-sand are, for the North end, Orford-castle N. by W. or N.  $\frac{1}{4}$  W. and the lights N. by E.  $\frac{1}{4}$  E. the marks for the South end are, Baldsey-church N. W. by N. and Orford N. N. E. It is steep-to, having 8 or 9 fathoms close to it; but between it and the Whiting is a very good channel, as the ridge, commonly called the Kettle-bottom, has not less than 2 fathoms water upon it: this ridge lies just above and without the Whiting; but between it and Baldsey-sand are 6 fathoms, so that if a ship cannot sail into



into Hosley-bay with a scant off-shore wind, and is obliged to put about, you will scarcely stem the tide; but, if you go without the Whiting in 6 or 7 fathoms, till you open the officer's house at Woodbridge-haven with Baldsey-cliff, or Hosley-church N. N. W. being above and without the Kettle-bottom, you may haul-in for shore, and get your leading-marks for the Sled-way. Or, Felstow-church, upon the rising part of Felstow-cliff will lead you between the South end of the Whiting and Kettle-bottom in 3 or 4 fathoms water; and you will be out of the Rough by the time you could have entered into Hosley-bay with a small wind: but you must observe, the tide sets strong over the South end of the Whiting towards the cliff.

The leading-mark to go without the Cutler is, the S. W. land open of the Naze, or Harwich-church open of Felstow-cliff near half-way to the brewhouse; but, in the night, come no nearer than  $5\frac{1}{2}$  or 5 fathoms, and open Harwich-lights before you come up to it. Upon the Cutler there is not above 4 feet water.

The N. E. end of the Cork bears S. from the West end of Baldsey-cliff, and Harwich-church N. W. by W. just below which are 8 or 9 fathoms, and it is commonly called Cork-hole.

The West Rocks lie N. E. and S. W. between which and the Cork is a deep swatch, of which you must be very careful. The body of the rocks lies due East from the Naze, and the N. E. end S.  $\frac{1}{2}$  E. from Baldsey-cliff.

THE SLED. The South end of the Whiting and Baldsey-sand to the eastward, with the Cutler, Cork, and West Rocks, to the westward, make the Sledway; in going out of which observe the following directions. Being in the upper part of Hosley-bay and the wind easterly, you may keep the small house, [*This house was blown down in January, 1784, but will be rebuilt,*] upon Or-

ford-beach, where the pilot-boats lie, just to the westward of Aldborough-church, which will run you a fair birth along the South end of the Whiting and Baldsey-sand; but, in a fair way with a flood tide, bring Baldsey-church upon the N. E. part of the wood, and steer S. or S. by E. according as the tide sets up, keeping the lead; and, if you cross the Ridge in 5 fathoms water, you will sail out.

The red buoy of the Ridge, or Rough, lies with Baldsey-steeple N.  $\frac{1}{2}$  E. Harwich N. W. by W. and the Naze W. or Harwich-steeple just open to the southward of the fort, Ramsholt-church open of Baldsey-cliff, and Baldsey-church about a sail's breadth open to the eastward of a tuft of trees that stands between the wood and the cliff. There are 18 or 20 feet upon it at low-water.

If the wind be in the N. W. quarter, you may bring Baldsey-steeple on with the rising part of the cliff, or Allerton-steeple (which is in ruins) just open to the eastward of Baldsey-steeple. But the best leading-mark is, the church on with a tuft of trees that stands between the wood and the rising part of the cliff, which will carry you into the best water, between the Rough and West rocks.

Turning out of the Sled you may stand to the eastward, with the church on the East end of the wood bearing N. W. by N. into 8 or 9 fathoms, and to the westward till the two churches come near together bearing N. by W. into 6 or 5 fathoms.

Running out of the Sled to the westward, you will have very uncertain soundings until you fall off the flat to the West Rocks, where you will have 7, 8, or 9, fathoms, soft ground; whereas most part of the Sled, except you are well over to the eastward in deep water, is hard and rugged ground. You may know when you

are without the rocks by having the tower upon the Naze W. N. W. or the westernmost tree upon the Naze open with the tower. From thence to the black buoy of the Gunfleet is S. W. by S. The tide of flood sets W. S. W. or W. by S. and the ebb the contrary. You may anchor in the Sled under the Cork in 6 or 7 fathoms; it is a good road for S. W. and W. S. W. winds; and under Baldley- and there is good holding-ground, in 8 or 9 fathoms, for an easterly wind.

The buoy of the Gunfleet lies with the white square house on the Naze on with the tower, bearing N. W.  $\frac{1}{2}$  W. Harwich bearing N. N. W. and Baldley-steeple, N. N. E. Coming out of the Sled, and having 10 or 11 fathoms water, you are in the stream of the buoy: the course from the buoy to the Hook is S. W. or S. W. by W. 3 miles: from the Hook to the beacon W. S. W. 2 miles; the Naze bearing N. N. E. The course from the Hook to the Spitway, is W. S. W. or W. by S. with an ebb tide. Upon the Spitway are placed two buoys, the one upon the East of the Buxey in the Swin, (black) the other red, in the Waller, upon the West end of the Gunfleet.

THE SWIN. Turning up the Swin up to the Whiticar: standing out of the Sled, you will have 12 or 13 fathoms water within the middle ground, 11 or 12 upon it, and 13 or 14 without: when you are over it, do not stand to shoaling your water, but about a mile below the beacon you will not have above 9 fathoms upon middle-ground, and it continues gradually shoaling till you lose it near the Old-spitway, upon which lies a black buoy. In working up, stand no nearer the Gunfleet than 10 fathoms till you are above the Hook, which lies with the Naze tower bearing N. N. W.  $\frac{1}{2}$  N. but, after you get above the beacon, you may stand to 7 or 6 fathoms, and you will have 7 or 6

fathoms upon the middle-ground. In the channel, towards the Gunfleet, you will have 10 or 11 fathoms; and on the side towards the Barrows there are 11, 12, and 13, fathoms in mid-channel.

Working up in the night, after you lose the middle-ground, come to an anchor, which you may in 6 or 7 fathoms, very good clay ground. After crossing the middle-ground, standing to the southward, tack in 10 or 11 fathoms water, which will prevent your getting at the back of the Heaps and Swin-middle; for, from the Heaps downwards, there runs another middle, which has not above 10 or 11 fathoms water upon it, but between it and the Barrows are 12 and 13. After you get up to the buoy of the Heaps 8 or 9 fathoms are near enough. Towards the lower-end of the middle you will have 6 or 7 fathoms, but, as you go up towards the buoy, it deepens to 8, 9, and 10, fathoms, steep-to.

The marks for the white buoy of the Heaps are, Much-holland-church N. N. W. and the Naze N. by E.

After you come up within about a mile of the Whiticar-beacon, stand not into less than 6 or 6  $\frac{1}{2}$  fathoms towards the Buxey; for from the Whiticar runs down a spit, upon which are not above 2  $\frac{1}{2}$  fathoms between it and the Buxey. The tide runs very strong into the Whiticar-swath; the course, from the Old-Spitway to the Whiticar, is S. W. by W.  $\frac{1}{4}$  W.

The black buoy of the Middle lies, from the buoy of the S. its, S. W. and from the Whiticar-beacon S. this buoy and the Shoe-beacon, lie from each other S. W. and N. E. 5 miles distance. In turning up to the Shoe, stand to the North-land into 6 or 5 fathoms, and off to the Barrows to 8 or 9. The Little-middle lies from the buoy of the Middle W. S. W. and has not above 20 feet water upon it at a low spring ebb.



But you must farther observe, that a knowl has lately grown up near the Barrows, upon which are not above 9 feet at low-water; the marks for it are, the Shoe-beacon W. by S.  $\frac{1}{2}$  S. distant about 3 miles, being then on with the garrison of Sheernets, and the Whiticar N. by E.  $3\frac{1}{2}$  miles, being then open to the westward of St. Osyth's trees; or the buoy of the Middle just open of the beacon. From half a mile above the buoy of the Middle, till you come within a mile and a half of the Shoe-beacon is extraordinary good riding in 6 or 7 fathoms water.

The Shoe-beacon bears from the black buoy of the Mouse N. E.  $\frac{1}{2}$  N. and from the land's end of Sheppy N. E. The Shoe is steep-to, having 12 fathoms close to the land: and just above the beacon the sand spits, of which you must be very careful. In working up through the Shoe-hole, be careful to put about the first shoal-cast, as it is steep-to on both sides; and, about half a mile above the Mouse-buoy, the sand-spits off near half a cable's length into the channel, and is generally called the Hook of the Mouse. Mid-channel you will have 12, 13, 14, and in one place, 15 fathoms.

The course from the Shoe to the Blacktail is W. S. W. 7 miles distance: but you must observe, the flood sets upon the North sand and the ebb off. The Blacktail-beacon and Mouse-buoy bear from each other E. and W. 3 miles distant.

The mark for the Blacktail-beacon is, the high land of Hadleigh open with the high land of Leigh, and the thwart-mark is a tuft of trees, (which are very remarkable,) called Charlock-trees, just open of the land's-end of Sheppy, the land's-end then bearing S. S. W.

Just below the Blacktail begins the Warp, on the lower end of which are 10 or 9 fathoms; but as you work up you will find, 8,

7, 6, and 5, fathoms water; but between the Warp and the North sand you will have 12 and 13 fathoms clay ground. After you have passed the Mouse, do not stand too near the Ooze-edge, which is steep-to, and a red buoy has lately been laid at the West end of it. The course from the Blacktail to the Nore is W. by S. 7 or 8 miles.

In working up from the buoy of the Mouse to the Nore, standing to the northward, put about the first shoal-cast of the lead, as the land, up towards the Blacktail and Shoeberry-nefs, is steep-to, and the tide sets strong over the sand. After you get to the lower end of the Warp, stand to the North-sand in 11 or 10 fathoms, and to the southward into 11 or 12, till you come up as high as Shoeberry-nefs, where you will not have above 5 fathoms upon the Warp, or Middle.

**THE NORE.** Supposing the Nore-light should be gone, the marks for it are, Minster-church on with the easternmost part of a triangular field, by some called Mizen hedge, and the Sheer-hulk just open with the garrison of Sheerness. In working up, come no nearer to the Nore than 7 fathoms, nor to Shoeberry-nefs than 10 or 9 fathoms: here you will find  $4\frac{1}{2}$  fathoms at low-water: upon the Middle, in the channel, you will find 9, 10, and, in some places, 12, fathoms water; but the channel to the northward of the Middle is very narrow, therefore it is best to put about, as soon as you fall off it into deep water, to the northward, for there the South channel is broad, having good room to work.

From the Nore to Hole-haven the course is W. N. W. distant 10 miles. In your way to the southward lies the Nore-sand, Yantland-spit, and the Blyth-sand; to the northward lie the Middle, Chapman, and Scars, for which observe the following directions.

Thwart

Thwart and above the Middle, it is gradually flat from side to side, 5, 4, and 3, fathoms: it is called Leigh Road.

After you have passed Leigh Road, you will fall into deep water; for, between this and Hole Haven, you will find 9, 10, and 11, fathoms water mid channel.

In working up above Leigh Road, stand to the South shore into 6 or 5 fathoms, and to the northward to 9 or 10: the nearer the Chapman, which is steep-to, the deeper the water; but, before you are out of the tide, (which you may know by the rippling it makes at the edge,) you must put about. The thwart mark for the Chapman is Hadleigh castle on with the middle of a square field, and the long mark is Fobben church on with the lower marsh-house up on Canvey Island.

Hole Haven open carries you clear of the Scars: they begin at the Scar houses, and run up to the haven: and are, as well as the Chapman, steep-to, having 10 fathoms close to them.

Over against the Hole Haven lies the Blyth Sand, the mark for the lower end of which is, Pitsey church on with the Scar houses, bearing N. N. E. The body of the sand lies opposite Hole Haven, and is sometimes dry at low water. The marks for the West end are, Pitsey church on with the lower marsh-house, near Shell Haven, and Benfleet mill on with a red-tiled house bearing N. by E. the leading mark, to run up or down alongside it, is, West Tilbury church a sail's breadth open of the Hope Point. The course from Hole Haven to the Hope is W. or W. by S. about 5 miles; you will have shoal water just at the entrance into the Hope, as  $3\frac{1}{2}$  or 4 fathoms water.

The HOPE. The Hope lies N. E. and S. W. about  $2\frac{1}{2}$  miles. Opposite to the Point, in the Light, lies Mucking Flat, which lies a considerable distance from the shore; and near the Coal-

House Point lie the Ovens; to avoid which, open Gravesend-Town with the Point before you, and get East Tilbury church in to the W. N. W. From the Coal-House Point the tide sets very strong over to the Kentish shore.

GRAVESEND REACH. Gravesend Reach lies E. and W. nearest. In this reach the water is deep and the tide very strong: therefore, if there be many ships riding here, and you intend to anchor, give your ship a good scope of cable, before you chock, lest your anchor come home, and you by that means get athwart-hawse. In this reach is a shelf that lies off N. w. Tavern, and another abreast the second Barways, below the Upper Point, close in.

Grays Reach lies N. by W. and S. by E. There is a flat lies below Broad-Nefs: and opposite to Broad-Nefs lies Black Shelf, which is very dangerous, as the tide, both ebb and flood, sets strong upon it, and it is very steep-to; therefore tack in time. — Tilbury church on with a small red house, which stands near the Causeway, at Grays, is the long mark. This shelf runs up nearly as high as the creek, which goes in just below St. Clement's church.

St. Clement's (or Fidler's) Reach lies W. S. W. and E. N. E. in which the tide of flood runs very narrow, and wholly over to the North shore. There is a shelf on the South side which has not above 7 feet water upon it; but, if you keep the body of Grays town open, you will go clear of it.

LONG-REACH. Long-Reach lies N. W. and S. E. There is only one shoal, called Dartford-Sand, which may be avoided by keeping Dartford-Creek open till you get Erith-Church open of the Point. You may anchor, in any part of this reach, in 6, 7, and 8, fathoms water.

The



The Rands (a sand in mid-channel so called) lies E. by N. and W. by S. The mark to go clear of it is, the upper wharf at Purfleet nearly on with the Point above Dartford-Creek. In sailing this reach with southerly winds, you must haul up to S. W. by W. but, if you are at anchor in Long-Reach, and have charge of a ship drawing 16 or 18 feet water, stay till near two hours flood, or till the water shall have flowed up to the foot of the wharfs at Purfleet.

Erith-Reach lies N. N. W. and S. S. E. In it are two bad shelves; one running from off the Point opposite to Erith, and the other (lying off Juliantree-Nefs) is called Juliantree-Sand. To avoid these shelves, steer far enough into Erith-Hole to get Rainham-Church on with the Ferry-House, keeping these marks on till you get Barking-Church within a sail's breadth of the Point below the Breach-House; then you may go for Halfway Reach, being clear of Juliantree-Sand. At 4 hours flood, ships of 10 or 12 feet may go between the Nefs and the Sand, giving the Point a small birth, as it spits off and is dry some way at low water. In Erith-Hole is good anchorage in 4 or 5 fathoms, the church bearing S. W. but, after you get above this hole, it is proper to moor your ship, if she draw above 12 or 13 feet water.

Halfway Reach lies W. N. W. and E. S. E. There is good anchorage in this reach for ships of 18 feet water; the best anchorage is Juliantree-Nefs on with the Point opposite Erith: and there is a good birth just above the Powder-House. Thwart of the breach lies a shelf one third of the river over; to avoid which keep to the southward.

**BARKING-SHELF.** Barking Reach lies N. E. by E. and S. W. by W. in it lies a very bad shelf: to avoid it observe the following directions. Coming out of Halfway Reach, you must give the Point on the South shore a good birth, as it is flat a

considerable distance off: after you are past it, haul in for the South shore until you get the Devil's house on, or rather shut, with Maggot-Nefs, which is the point opposite to Barking-Creek. The lower end of the shelf lies with the Powder-House upon the South shore on with a single tree on Lecson-Heath; and, when you get Barking-Church on with the Powder-House, you are above the shelf. But, if you cannot sail in within it, be sure to put about in time, as the tide sets directly upon it. — There is also a good channel to the northward of it: the mark to run through is, the southernmost tree at the Devil's house on with Maggot-Nefs: giving the point below Barking-Creek a birth, there is good anchorage off Tripcock trees for ships of 12 or 13 feet water: but, from Barking-Creek two or three cables lengths upwards is very shoal one third of the river over.

Gallions lie N. N. E. and S. S. W. There is a shelf on the East side which lies nearly half the river over; but, if you bring Woolwich-Church a sail's breadth on the Point, it will carry you clear of it. The best water to anchor in here is with the Sluice open, and a birth below it, in 17 or 16 feet at low water. The Point above the Devil's house is flat, therefore you must give it a good birth before you haul in to Woolwich Reach. Opposite the Point, and above the shelf on the East shore, is good riding for ships of 12 or 14 feet water.

**WOOLWICH REACH.** Woolwich Reach lies E. by N. and W. by S. There is a shelf on the North side, beginning with the broad street open, which runs up as high as Ham-Creek; and another, at three quarters of the reach up, lying with Charlton church on with the uppermost sand-wharf. There is also a shelf on the South side, just above the King's moorings. But this reach is very shoal, after you have passed the moorings, till you get

get into Bugby's Hole. The best anchoring is with the broad street open in 18 feet at low water; and there are several good births, upwards and downwards, as low as the Point, in 14 or 16 feet at low water; or you may stop a tide along-side the ships in ordinary.

Bugby's Reach lies N. W. by N. and S. E. by S. On the North side lies a shelf almost half over the river, which begins just below Bow-Creek, and runs down almost as low as the Point. You may anchor, in Bugby's Hole, in 13 or 14 feet at low water.

Blackwall Reach lies N. by E. and S. by W. There is a rock, lying just below Blackwall Old Dock, of which you must be very careful, as the tide sets strong upon it, especially the ebb. The mark for it is, Limehouse church on with the northernmost house in the Yard. There is a shelf on the East side opposite the Folly house; to go clear of it, keep lady Crowley's clock-house on with the Point. You may anchor on the West side, and moor at any of the posts in 12, 13, or 14, feet water; and, to the eastward, in 16 or 18 feet water. Abreast the second chalk-heap, moor to the eastward.

Greenwich Reach lies in a semi-circle from the W. S. W. to the N. W. in which are two shelves. In going up, keep Blackwall Reach open till the clock on the storehouse, in the King's yard at Deptford, be open with the Isle of Dogs. The uppermost shelf lies just below Deptford-Creek, and stretches near one third of the river over. You may anchor at the Isle of Dogs from below the house and upwards, in several births, in 15, 16, or 17, feet at low water.

Limehouse Reach lies N. N. E. and S. S. W. Be careful of the shelf which runs off from the third southernmost mill and

stone-wharf; the passage between which and the ships lying at the Red House is sometimes extremely narrow, being scarcely a ship's length. Blackwall Rock lies at the upper part of the reach on the East side; and, at a small distance from the shore, opposite, is a mud-bank, which runs near half way over the river. Observe, the tide sets strong into Limehouse-Hole.

The POOL. In the Pool are two shelves: — the one off Pitcher's Point, most part of which has been removed by the corporation of the Trinity-House; and the other off Fountain-Stairs: — keep over to the northward to avoid them.

*Directions for sailing into Harwich, over the Naze, in and out of Goldermer's Gat, &c.*

**B** EING in Hosley Bay, your course up to the Cutler is W. S. W. or S. W. by W. Come no nearer the sand than 5 or  $5\frac{1}{2}$  fathoms; and, when you get Harwich steeple near midway between Felslow-Cliff and the brewhouse, you are far enough without it; and, when you get Ramsholt church open with Bauldfey-Cliff, you are above it, and may haul in, keeping Orford church and castle a ship's length open of the lower part of Bauldfey-Cliff, till you get the flag-staff at the fort on with Harwich church, which is the thwart mark for the Platters. If you are running up, come no nearer them than 5 fathoms: if the wind should be off shore, being past the Platters, haul in for the Andrews, (or Pole-End,) keeping Bauldfey steeple open with Felslow-Cliff till you bring the lights in one; they then bear N. N. W.  $\frac{1}{2}$  W.

**HARWICH.** In working up, you will find very irregular soundings, as 4, 5, and 6, fathoms; again 4, and  $3\frac{1}{2}$ ; and, upon



upon a shoal, which lies between the Platters and Cork, with Harwich church on with the beach-end at the fort, there are not above 3 fathoms at low water. Stand no nearer Felslow-Cliff or the Platters than 5 fathoms, and off towards the Cork in 7 fathoms, or the S. W. land just open: when you have the lights on, keep them so till you are near the fort, which you must keep close on-board to avoid the Altar, which lies half a cable's length from the beach, beginning with the brewhouse open to the southward of the fort, and ending when it comes open to the northward; between which and the main there are not above 12 or 13 feet at low water: therefore, if you are in a ship of a large draught of water, and it blows strong, you must stay till half-flood before you go for Harwich, where it flows a quarter past eleven, full and change, and about 12 or 13 feet up and down.

Being past the fort, keep the East shore on-board, at about a cable and a half length's distance, till you open Dover-Court church with Harwich town; then you may anchor, or go up thwart the town. Small vessels commonly go into the entrance of Ipswich river, where they ride out of the way of great ships, and have a far better road with westerly winds: at the entrance is a long point which runs from Shotley; keeping Harwich church upon the South end of the storehouse will carry you below it. — The best mark over the Glutton, sailing into Harwich, is the following. Run along the East shore till the flag staff at Languard fort comes on with the clock-house; then will the fort appear in three distinct parts, like two streets, which may be plainly observed in the night. This mark will lead you into the best of the water, till Dover-Court church comes open.

But, if you intend to anchor in the Rowling-Grounds, as soon as you are within the Ridge, (which lies but a small distance to the S. W. of the Andrews,) steer over towards the cliff till the

lights be a sail's breadth open to the westward, and the high part of Bauldsey-Cliff just open of Felslow-Cliff: here you may anchor in 5 or 6 fathoms in a very good road

If you are coming into the Sled, and are bound to Harwich, steer to the northward till you get Harwich steeple on with the brewhouse; then steer in N. W. and N. W. by W. for Harwich, till you shut the S. W. land; then you may haul more to the westward till you get the lights on, and then proceed as before directed.

Vessels of 9 or 10 feet water may go to the westward of the Altar, and between the Gristle and Guard, which is called the West channel: the mark for running through it is, a single round tree up the country above Ipswich water on with the corner of the marsh-wall that lies on the East side of Ipswich river. In this channel, at the lower part, is a wreck, upon which the corporation of Harwich has laid a buoy that has a small flag upon it.

N. B. If you have met with any misfortune at sea, you may be refitted here with sails, yards, masts, anchors, cables, carpenters, &c.

But, if you are bound over the Naze into the Wallet, after you have passed the Cutler, keeping Orford church and castle a ship's length open of the cliff will run you clear of the Ridge; and, the S. W. land just open will run you within the Stone Banks, upon which are not more than 5 or 6 feet at low water, the ground being very hard and uneven. The thwart-mark for them is, Dover-Court church on with a white farm-house bearing N. N. W.  $\frac{1}{4}$  W. After you are past them, you may open the S. W. land: keeping Harwich steeple open of the cliff will lead you in the best of the water over the Naze, upon which you will not have above 2 fathoms at low water, the ground very hard.

But,

But, as the Spitway alters very often, it is not to be trusted to by any persons except those who continually use the coasting-trade.

**GOLDERMER'S GAT.** Being in the Wallet, and bound out of Goldermer's Gat, bring the Naze tower in to the N. W. or N. W.  $\frac{1}{2}$  W. if with a flood-tide, steer E. S. E. if with an ebb, S. S. E. and, if you observe this mark, a white square house, (called Walton Hall,) built in the Gothic taste, just open to the eastward of the tower, it will carry you out, in the best of the Gat, in 5, 6, and 7, fathoms, till you fall into deep water in the Swin. In the Gat, working in or out, you may bring the square house and tower on with each other, in 7 or 6 fathoms towards the Gunfleet, and to the West rock in 4 or 5 fathoms. — Within the Gunfleet, about two miles above the buoy, the road is extremely good, with S.E. southerly, or S.W. winds, as the Gunfleet, in that place, dries the first two hours ebb: therefore, if a ship get the length of the buoy with a S. W. wind, and hard blowing is feared, the best method is, to stretch into the Wallet, and work up about two miles, coming-to in 7 or 8 fathoms; where there will be better riding with the second-service upon the small bower than there would be with both anchors and whole cables a-head in the Swin,

The same may be observed by ships bound down, having N.E. and northerly winds. Being down to the buoy, you may go into the Gat, and anchor under the rocks in 6 and 5 fathoms, having the square house on or open to the westward of the tower; for, farther to the eastward, the ground is not so clear.

*Directions for sailing from Lowestoff, or out of Holesley-Bay, into the Downs.*

**B**EING in a fair way without the Stanford, or St. Nicolas's Gat, steer S. by W. or S. S. W. in 16 or 18 fathoms, till you come the length of the Longsand Head, which is about 18 leagues distance, and then you will have 23 fathoms water and soft ground in mid-channel, between the Kentish Knock and Galloper: but, if you have the wind to the westward, you must take care not to haul too much to the westward after you have passed the Longsand Head, lest the Kentish Knock should take you up, which bears from the Longsand Head S. 5 miles; and the Knock bears from the North Foreland N.E. by N. 7 leagues; so that you may, with the wind in the N. W. quarter, haul up to the S. W. but no higher, if in the night, till you make the Foreland light: in a fair way from the Knock you will have 20 fathoms, 18 fathoms, &c. but, when you are within 4 leagues of the Foreland, you will not have above 14 or 15 fathoms.

In working after you have passed Orford-Nefs, stand in to the Shipwash in 12 or 13 fathoms, and off to 20. You may stand to the Longsand to 8 or 10 fathoms, and off to 20 fathoms; but stand no nearer to the Knock than 13 or 12 fathoms: after you have passed the Knock, you must be careful not to stand too far into the Broad (or Queen's) Channel, as there are several Knowls which lie without the Longsand, and they will take a ship up standing off again, should she get within them.

You must observe, that, between Longsand Head and the Galloper, the tides meet so that from thence the ebbs run to the southward. Here it flows between 11 and 12, full and change.

NORTH



*Directions from the Downs to the River Thames.*

*For the marks for the Inner Channel, see the directions from Lowestoff to the Downs, pag 69.*

**NORTH FORELAND.** Your course from the Gull-Stream to the North Foreland is N. by W. or N. N. W. but very irregular soundings, as 4, 5, 6, and 7, fathoms water; and there is a knowl, which lies nearly half a league from the shore, that has not above  $2\frac{1}{2}$  fathoms upon it at low water, the light-house bearing N. W. by W.

Long-Nose runs off from Fair-Nefs N. E. half a mile; the mark to go clear of it is, to keep Margate church or Mill-Sweeps above the land, or open the mill, that stands below Birchington, with Ledge-Point, and come no nearer to it than 6 or 7 fathoms water: the thwart-mark for it is, the North-Foreland light-house on the North cliff of Kingsgate bearing S. by E.

From Fair Nefs to Cliff-End your course is W. by N. or W. N. W. according as you have the wind and tide.

Margate-Sand, the Searn, and Woolpack, and the coast of Kent from Margate to Hearn, form the South channel: the course up is W. by N. or W. N. W. into Westgate-Bay.

But, in working up, stand off to Margate-Sand into 6 or 5 fathoms, and into the main to 5 fathoms. The mark to anchor in Margate road is, Margate church and mill in one, in 7, 8, or 9, fathoms water.

The best anchorage in Westgate-Bay is, Minster mill in one with the barn that stands in Westgate-Bay, and Margate church on with Nailand Point, in 5 or 6 fathoms water.

**MARGATE SAND.** The mark, for the South end of Margate-Sand, is, Margate church and fort in one; but a buoy is laid upon the easternmost extremity of the sand in 4 fathoms water, Nailand mill and Minster mill being on with each other,

and the North-Foreland light-house S. by W. and St. Peter's church S. by W.  $\frac{3}{4}$  W.

Just above Westgate-Bay begins the Middle-Ground, upon which are not above 11 or 12 feet at low water. The thwart-mark for the East end is, Birchington church bearing S. westerly, and your mark to run up to the southward of it is, to keep the wood (which makes in the form of a barn) open to the southward of the Reculvers. In this channel, which is near a mile long, you will have from 7 or 8 fathoms at the lower, to  $3\frac{1}{2}$  or 4 at the upper, end.

The Hook of Margate-Sand has not above 6 feet at low water upon it: the longest or leading mark for it is, St. Peter's church on the East side of Westgate-Bay, and the thwart-mark is, Monkton mill on with a single tree open of Cliff-End.

The best anchorage in the Gore is, Monkton mill on with a grove of trees near the water side, and St. Peter's church between the house and barn in Westgate-Bay, in 5 or 6 fathoms water.

Your course from Cliff-End to the buoy is N. W. by W. or W. N. W. or St. Peter's church in the middle of Westgate-Bay.

In turning from the Cliff to the buoys, stand St. Peter's church to each side of Westgate-Bay, or from the barn to the East cliff of the bay. If you are in a ship of 15 or 16 feet water, stay till half tide before you weigh, as there are several knowls that have not more than 10 or 11 feet at low water; elsewhere you will have 3 fathoms up to the buoys.

The thwart-mark for the East end of the Horse is, Chislec mill on with a farm-house to the westward of the Reculvers, and St. Peter's church 2-3ds to the westward of Westgate-Bay.

The Searn buoy lies upon the W. side of the Searn-Swath, which

which runs out between the Woolpack and Margate-sand; the thwart-mark for it is, Chislet-mill 2 or 3 fathoms breadth to the eastward of the Reculvers, and St. Peter's-church on the East side of Westgate-bay. It lies in 9 or 10 feet at low-water.

The Laft is a sand which forms the South side of the Narrows; it is more than a mile in length, and has three black buoys upon it, viz. the East, the Elbow, and West, buoys: the East buoy lies with Chislet-mill just open to the westward of the Reculvers, and lies in 2 fathoms at low-water. The Elbow buoy lies from the East buoy N. W. by W.  $\frac{1}{2}$  W. in 10 or 11 feet at low-water. The West buoy of the Laft lies in 2 fathoms water; a single tree to the westward of Bishopton on with a gap in the cliff, and Mount-pleasant on with the westernmost grove of trees in the Gore, are the marks for it.

The Woolpack lies to the westward of the Searn, upon the West end of which is laid a red buoy; between which and the white buoy, that lies upon the East end of the Spell, is the Old-channel, through which there are not above 7 or 8 feet at low-water. The swinging beacon, which lies in it, must be left to the eastward of you: it lies from the buoy of the Woolpack N. W.  $\frac{1}{2}$  N. in 9 feet water: the leading-mark is, St. Peter's-church in one with a swamp on the East-cliff of Westgate-bay, or St. Peter's-church nearly on with the easternmost house in a village called Galeings, bearing S. E. easterly. The East buoy of the Spell (which you must leave to the westward of you half a cable's length) lies S. W. by S. from the swinging beacon, about a cable's length distant. This channel is most commonly used, as it is very short; but the New-channel, or Narrows, has most room: to go through which you must leave the Spell to the northward of you, which is about  $\frac{3}{4}$  of a mile long, and haul

round the white buoy that lies upon the West end of it. This buoy lies in 9 or 10 feet at low-water; the leading-mark to it is, St. Peter's-church on with the house in Westgate-bay, and Cleave (which stands near Mount-pleasant) on with the Boat-house in the Gore. You must not leave this buoy too far to the eastward, lest you get upon a bank that lies thwart the channel, about two cables length distant from the buoys, having not above 5 feet water upon it.

The course from the Old-channel to the buoy of the Spaniard is N. W. or N. N. W. 6 or 7 miles, according as you have the wind and the velocity of the tide, which sets here W. by N. or W. N. W. towards Sheppy. Upon the Flats you will have 10 or 12 feet at low-water. In working over, stand to the eastward till Minster-mill be on with the East end of St. Nicholas's-wood, and to the westward till St. Nicholas's-church open to the eastward of the Reculvers. But, if you cannot get into the First-deeps, you must go back into Horseshoe-hole; the marks to anchor in which are, St. Peter's-church in the middle of Marsh-bay, and Minster-mill upon the Cliff-end, or the Reculvers S. by W.  $\frac{1}{2}$  W. in 20 feet at low-water.

You may anchor in the First-deeps, the buoy of the Spaniard bearing S. W. a large mile distance, in  $2\frac{1}{4}$  fathoms at low-water; or you may anchor abreast of the buoy in three fathoms.

The buoy of the Spaniard lies with St. Nicholas's-church a ship's length open to the eastward of the Reculvers; the Reculvers bearing S. E.  $\frac{1}{2}$  S. and the Land's-end of Sheppy W. S. W. upon the East end of which is a white buoy.

FIVE-FATHOM-CHANNEL. From the buoy of the Spaniard to the buoy of the Spile, up Five-fathom-channel, the



*Directions from the North-Foreland to the Buoy of the Spaniard.*

course is W. N. W. distant 5 miles: but you must observe, the flood sets strong over the Spaniard. In this channel you will have 3,  $3\frac{1}{2}$ , and 4, fathoms water; and, in working through, stand no farther either to the Red-sand or the Spaniard than just to shoaling the water, upon either side. The mark for the Gilman (upon which is a red buoy) is, St. Nicholas's-church on with the Reculvers; and, after you have these marks open to the westward, you are above it. Between the white buoy upon the Spaniard and the Red-sand is grown up a middle-ground, upon which is not above 5 or 6 feet at low-water. Keep the Spaniard on board till you are above the buoy, then stand to the North-westward for the buoy of the Spile.

When you are at the buoy of the Spile, Mousehole-church will be open of the Land's-end of Sheppy, the Land's-end then bearing S. S. W. and Minster-church in the Swamp.

From the buoy of the Spile the course to the Nore is W. N. W. nearest. Upon the Cant you will have 10 or 12 feet at low-water. Coming off, you will have 9 or 10 fathoms in mid-channel, 8, 9, or 10, upon the Warp; 6, 5, and 4, until you deepen the water in the North-channel.—*For which, and for the directions for the River, see those for the North-channel.*

*Directions from the NORTH-FORELAND round MARGATE-SAND, up the QUEEN'S-CHANNEL, and over the FLATS to the Buoy of the SPANIARD.*

**B**EING in the Gull-stream, and intending to go through the Queen's-channel, steer N. or N. by W. till you get the North-Foreland-light into the S. by W. and keeping it thus will bring you to the East buoy of Margate-sand, which lies in 4 fa-

thoms water. In the fair way you will have 6, 7, 8, and 9, fathoms, till you come near the sand, then you will have 6, 5, and 4. Here the first of the tide sets into the S. W. and the latter part into the N. W.

After you have Birchington-steeple into the S. W. by W.  $\frac{1}{2}$  W. your course, to go between the Spit of Margate-sand and the Tongue, is N. W. and N. W. by W. distant 3 or 4 miles. The Spit lies with Minster-mill on with the barn in Westgate-bay, and North-down on with Reading-mill.

The thwart-mark for the West end of the Tongue is, Mount-pleasant in one with Birchington-steeple, bearing then S.  $\frac{3}{4}$  W. Up to this buoy, in mid-channel, are 6, 7, 10, 11, and, in some places, 14, fathoms.

Your course from the Hook to the Pan-patch buoy is W by N. 4 or 5 miles distant: which buoy you must leave about a quarter of a mile to the northward of you, and it will carry you between the Tongue and the Wedge. The Wedge buoy, which is upon the northernmost part of the sand, lies with Monkton-mill on with the eastmost grove of trees open of Cliff-end, bearing S. by W.  $\frac{1}{2}$  W. Between the Wedge and the Tongue, you will have 6 and 7 fathoms towards the Tongue, upon the middle 4 and 5, and 9 and 10 fathoms towards the Wedge.

The Pan-patch buoy lies nearly a mile from the standing beacon upon the Pan-sand, which then bears N. W. by W.  $\frac{1}{2}$  W. The thwart-mark is, Monkton-mill on with the westernmost grove of trees, to the westward of Cliff-end, bearing S.  $\frac{1}{4}$  E. The standing beacon upon the Pan-sand has St. Peter's-church bearing S. E. by S. Birchington S. by E.  $\frac{3}{4}$  E. and the Reculvers S. by W.  $\frac{1}{2}$  W.

After you are above Pan-patch buoy, steer W. N. W. leaving the

the standing beacon upon the Pan-sand to the northward, and the buoy of the Knowl to the southward of you; keeping this course 2 or 3 miles up to the white buoy which lies upon the West end of the Pan-sand in 12 feet at low-water, the Reculvers bearing S.

The buoy of the Knowl lies S. S. W. from the standing beacon upon the Pan-sand about  $\frac{3}{4}$  of a mile distant, and Minister-mill on with Grove-end, which is open to the westward of Cliff-end bearing then S. S. E. This knowl is very small, and has 10 or 11 feet upon it; between which and the Pan-sand are 4 fathoms in mid-channel. From the swinging beacon upon the Pan-sand to the buoy of the Spaniard the course is W. N. W. westerly 4 miles. Depth of water across 10 or 12 feet.

**THE QUEEN'S CHANNEL.** In working from the East end of Margate-sand up the Queen's channel, stand no nearer the lower end of the Tongue than 6, or to Margate-sand than 5 or 4 fathoms: but, after you get Birchington-mill into the S. W. by S. or on with the East cliff of Westgate-bay, the sand is steep-to; therefore come no nearer than 9 fathoms. Here, in mid-channel, you will have 14 fathoms water. The West end of the Wedge and Tongue are steep-to, therefore put about the first shoal-cast. Your soundings across are 10 or 9 fathoms near the Tongue, towards the Wedge 9 fathoms steep-to, but upon the Middle-ground you will have 6 or 7 fathoms water.

Ships of 10 or 12 feet water, at one-third flood, after they are above the Wedge, may work between the Knowl and Margate-sand into Horseshoe-hole or over the Flats into five-fathom-channel; but the most water lies between the Knowl and the Pan-sand up to the swinging beacon. In this channel you will have 4 or  $4\frac{1}{2}$  fathoms up to the West end of the Pan-sand, where it shoals to 3 fathoms; and after you are past the beacon you come upon the Flats.

The Queen's-channel is very bad to anchor in, as being exposed to most winds, and it has, towards the lower part, deep water. But ships of a small draught of water may run out of it into the Gore, at high-water, through the Searn-swath, in which, at that time, are 14 or 15 feet at neap-tides. The mark to run through it is, Monkton-mill bearing south-easterly, being then just open to the westward with the westermost grove of trees in the Gore, called Upper Hall-grove.

*Directions from the NORTH-FORELAND round the LONG-SAND-HEAD through the KING'S-CHANNEL into the SWIN.*

**T**HE course from the North-Foreland to the Kentish-knock in a fair way is N. E. about 7 leagues. In the fair way you will have 14 or 15 fathoms water; and when you have 18 or 20 fathoms, soft ground, you are the length of the Knock. The marks to run for it are, Reading-mill and St. Peter's-church in one, bearing S. W. The Knock bears from the North-Foreland N. E. by N. 6 leagues.

The Longsand-head lies from the Knock N. 5 miles distant. In working, stand to the Knock in 11 or 12 fathoms, and off to the Galloper to 20 fathoms. The depth of water across is 22 fathoms. At the Longsand-head the flood-tide sets S. W. by S. and the ebb N. E. by N.

The Longsand-head and the head of the Sunk lie from each other E. S. E. and W. N. W. 4 miles distant: between which run in the Black-deeps. The course from the Longsand-head to the buoy of the Gunfleet is N. W. with a flood, and W. N. W. with an ebb, about 10 miles distant. The Naze bears from the Long-



*Directions for the North-Sea, Cattagat, and Sound.*

land-head N. W.  $\frac{1}{2}$  W. 5 leagues. In working into the King's-channel, stand to the back of the Shipwash to 11 or 12 fathoms; the S. W. end of which lies with the Naze-tower bearing W.  $\frac{1}{4}$  N. Baldsey-church on with the North end of the Great-wood, bearing N. N. W.  $\frac{1}{2}$  W. and Orford-church and castle N.  $\frac{1}{4}$  W. to which you may stand into 9, 8, or 7, fathoms.

Between the S. W. end of the Shipwash and the Sunk you will have 13 or 14 fathoms. Stand no nearer to the Sunk than 11 or 10 fathoms, or the Naze-tower bearing N. W. After you are within the Sunk, and abreast of the buoy of the Gunfleet, proceed as before directed, in the directions for the North-channel.

*Directions for the NORTH-SEA, CATTAGAT, and SOUND.*

**I**F you are in Hosley-bay, and bound to Norway or the Sound, run so far round Orford-nefs unto Aldborough-bay till you have opened Orford-castle a fail's breadth to the northward of the church, then steer N. E. by E. or E. N. E. 14 or 15 leagues, which will carry you out into deep water, to 26, 27, or 28, fathoms, and a good birth, without Smith's-knowl: this knowl lies from Lowestoff E. N. E. 10 leagues, and from Yarmouth E.  $\frac{1}{2}$  N. 9, and has about  $3\frac{1}{2}$  fathoms water upon it. After you get into deep water, you may steer N. E. or N. E. by N. 15 or 16 leagues, over the Smart (or black) bank to the edge of the Well-bank. After you get to the northward of latitude 53 deg. 10 min. N. you shoal in your depth to 18, 19, or 20, fathoms, dark-coloured sand; and upon the S. and S. S. E. side of the Well-bank you will have 17, 18, or 19, olive-coloured sand.

**WELL-BANK.** Continuing the course N. E. by N. you will

have, upon the Well-bank, 18, 20, and 23, fathoms, fine sand, and sometimes sand with black specks. Upon the North edge, 26 and 27 fathoms, stony ground, with rough sand. This bank is about 11 leagues across; between which and the Dogger-bank lie the great Silver-pits, in which you will find 30 to 45 fathoms water, and they are about 5 leagues over.

**DOGGER-BANK.** After you strike soundings upon the Dogger-bank, upon it you will have irregular soundings, as 24, 18, 11, 17, 16, and 14, fathoms, with variable soundings, but mostly fine sand. Keeping the course on N. E. by N. 14 or 15 leagues, you will then be upon the body of the Dogger, and in latitude 55 deg. 10 min. N. nearest, and will have made 20 leagues meridian distance to the eastward from Orford-nefs: then it will be time to alter your course, and shape it for the Naze of Norway or the Scaw, accordingly as you have the wind, either to the southward or westward: if in the latter board, steer N. E. by E. about 50 leagues; which course will carry you over the South end of the Long-bank and upon the Juttish-reef, in 32 or 34 fathoms, the Naze being then W. by S. 20 leagues: and an E. or an E.  $\frac{1}{2}$  S. will be a good course up the Sleeve.

**LONG-BANK.** By the foregoing course, after leaving the North side of the Dogger, you will come upon the S. E. side of the Long-bank, where you will have fine yellow sand, and from 26 to 28 fathoms water; after which you will have from 29 to 33, or 34, slimy mud. But, if you steer farther to the eastward, 18 leagues W. N. W.  $\frac{1}{2}$  W. from Bovenbergen, and S. W. 26 from the Naze of Norway, lies a small bank of 14, 16, to 20 fathoms: the sounding upon the middle of this bank are like oatmeal, but, in several places, especially on the North side, it is intermixed with small stones.

Off Neemet-island, from 3 to 5 or 6 leagues along-shore to Bovenbergen, you will have inwardly 14 to 17, and 20, in the offing, fine sandy ground.

**THE REEF.** Coming from the southward, after you pass the Dogger, continuing your course towards the Naze, be sure you found in time for the Reef; more especially with S. and S. W. winds, as then the current sets to the northward; and observe, when you drop off to the northward, there is a small bank, from 30 to 35 fathoms, lying 8 leagues W. by N. from the Naze, which might probably be taken for the Jutts-reef: the North side of this bank lies S. 4 leagues from the island and harbour of Hitteroe.

Upon the Naze of Norway is a light-house, and about 3 miles to the W. N. W. upon an island, is another, both of which keep a good light in the winter season, but the former is much more conspicuous than the latter.

To the northward of the Naze are several harbours, the principal of which are Old and New Silo, Hitteroe, and Eckesound: the latter two harbours are extremely good ones.

From the Naze to Fleckrey-island the course is E. and E.  $\frac{1}{2}$  N. 7 or 8 leagues. This is the best harbour in Norway for a large fleet of ships, having exceeding good outlets either at the E. or W. gats. Between this and the Naze there are several harbours, the principal of which is Mandhal, which lies 4 or 5 miles to the eastward of the Naze: but into these, as well as all other ports in Norway and Sweden, it is proper to take a pilot.

From Fleckrey to Father (or Fader) island the course is E. N. E.  $\frac{1}{2}$  E. 28 leagues; but you must make allowance for the current, which, upon the coast of Norway, mostly sets to the westward, but the velocity is generally governed by the winds. Between Fleck-

rey and the Father-island are a great number of harbours, the principal of which are, Mardow, Eastrice, Kokoge, Longsund, &c. The Boat bottom-upward bearing N. N. W. you are thwart of Fleckrey, and the Drummels N. N. W. you are abreast of Mardow. Eastrice is known by a remarkable white rock that stands up above the harbour on the high land.

Upon the Father-island, which lies upon the South side of Christiana Feure, is a light-house. Here you take a pilot, if you have not got one before, who conducts you to Christiana, Dramn, Fredrickshall, or any port adjacent, either to load, or for shelter with a contrary wind.

But if you are off the Naze of Norway, and bound to the Sound, your course is E. S. E. 33 or 34 leagues to the Scaw; after you have run that course 22 or 23 leagues, you strike soundings in 48 or 50 fathoms, then Hartshall will bear S. or S. by E. 6 leagues.

**THE SCAW.** The Scaw is a low land, and makes much like the coast of Norfolk, between Haiborough and Winterton, and is easily known by the church and light-house which stand upon the Scaw-point: there are several houses, but one without a chimney remarkably large, which stands to the eastward of the church.

**COAST OF JUTLAND.** Should the wind be to the Southward or eastward of South, coming over the sea, when you fall off the Dogger, shape your course to sail in with Bovenbergen, or the Holmans; then run along the coast of Jutland, from 20 to 30 fathoms water; but you will find several banks that have but 12 or 14 fathoms, and some that have but 8 or 9.

From Bovenbergen (which lies N. by E. 12 or 14 miles from Neemet-island) the course to the Holmans is N. E. 14 miles; from



from thence to East-head (which is foul and rocky a league off shore) the distance is 12 miles E. N. E. and from East-head the distance is 7 leagues to Robsknut; and 3 leagues farther lies Hartshall: the course up is E. by N. and from thence to Scaw, E. is 8 leagues.

The Naze of Norway lies from Bovenbergen 24 leagues N. by W.  $\frac{1}{2}$  W. and the Father-island lies N. by E. 23 leagues from the Scaw.

To the N. W. and N. N. W. you will have a bank, 2 or 3 miles in breadth, which has 8, 10, and 6, fathoms upon it: it lies one league from the main, between which and the bank is 16 or 17 fathoms water: to the eastward of it you fall into deep water, 20, 30, and 50, fathoms, the Scaw-light bearing S. by W. 5 or 6 miles.

The Scaw-light on with the church, bear W. by S. and, when you have them so, you are abreast of the Scaw-reef, ~~close to~~ which is 10 fathoms water, about 2 miles distant from the shore; 4 or 5 miles distant you will have 30 fathoms, which is a good distance to go round the Reef. The light W. S. W. you are to the northward, and when you have it West you are to the southward, of the Reef.

From the Scaw to Mastrand (or Mastrand) the course is E. by S. or E.  $\frac{1}{2}$  S. 11 leagues. Mastrand is very easy to be known, having a remarkable castle on the island. Upon the castle is erected a light-house, which, like all other lights in Sweden, is extinguished the first day of May, and not lighted again till the first day of August. The Paternosters lie to the northward of the entrance into Mastrand, and are a long range of island-rocks, that lie N. E. and S. W.

The South end of the Paternosters bears from the castle, or

light, W. by N. 4 or 5 miles; but if you bring Mastrand-castle and light-house West, you may run boldly in, leaving on your starboard-side a sunken rock, called Kakelbaden, which has 13 or 14 feet water upon it, and lies from the lanthorn upon the castle (in which the light is kept) W. by S.  $\frac{1}{2}$  S. nearly 3 miles. You may go in at each end of the island, but the North end is the clearest.

In running over the Scaw to Mastrand, you will have from 30 to 45 fathoms clayey ground; the nearer the Swedish shore, the deeper water, for abreast of the Paternosters, 5 miles from them, you will have 50, 60, and 70, fathoms.

If at any time, in little wind, you should be set near the Paternosters, you must come to an anchor in 30 fathoms water, as the current runs here sometimes at the rate of two knots and upwards to the North-eastward, and directly amongst them. From the Paternosters to Wingo-island the distance is 16 miles S.

**SCAW TO GOTTENBURGH.** But if you are at the Scaw, and bound to Gottenburgh, your course is S. E. by E. 11 leagues to Wingo, upon which is a low tower, with a spire and a ball, erected for a sea-mark: here the pilots resort, at a small red house upon the South side of the island, to which you may stand with great safety, it being steep-to, giving the West-point a small birth.

From the Scaw being bound to Elsinour, with the wind northerly, or inclinable to the eastward, it is best to make Wingo, and then shape your course up the Cattagat as following.

Running from the Scaw to Wingo, you will have, off the Scaw, 30 fathoms, then 25 to 22 fathoms, fine sand with bright stones, and sometimes clay; but as you draw near the Swedish shore, you deepen to 26, 30, and 40, fathoms, within 2 miles of Wingo; under

under which, if the wind blows strong out of Gottenburgh, you may anchor in 9, 10, 11, to 14, fathom water.

From Wingo to the Nidigen the course is S. or S.  $\frac{1}{2}$  W. 7 leagues; 28 to 40 then again 26, 28, to 36, fathoms, off the Nidigen. The Nidigen lies S. W. nearly a league from Mälo island: between the island and main is Mälo-sound, a good harbour.

From the S. W. end of the Nidigen runs off a ridge of foul ground. One mile from the island, upon Nyden (or Nidigen) is erected a large wooden beacon with two light-houses. S. W. by S.  $\frac{1}{2}$  S. from the Nidigen-light 8 miles lies a bank of red sand and shells, which has no 5 fathoms water upon it.

The course from the Nidigen to the Koll is S.  $\frac{1}{2}$  W. 20 leagues distance. This course will carry you midway between the Swedish shore and Anholt, where is 8 leagues across from shore to shore.

**WARBURGH-HARBOUR.** Five leagues to the southward of Nyden lies the castle and harbour of Warburgh. If you are bound into this port, steer right in for the rock called Scrivener's-rock, which lies to the westward of the castle, and upon which the pilots reside. If a flag is hoisted upon the rock, you may be certain of a pilot; but if it blows too hard for a boat to come out, the pilot will, either from the rock or a boat, waft you in by a small flag upon a boat-hook staff, which you must be careful to observe. The entrance into this harbour is between the afore-said rock and castle, and is clean on either side; and in the harbour ships of 14 or 15 feet may ride with safety, but those which draw 18 or 20 feet, must anchor without the harbour, between the castle and Scrivener's-rock. If you are coming from the southward, it is all clean, and you may run in along-shore; but if you are from the northward, keep without the Pilots-rock 2 or 3

miles to the westward, till you open the church at Warburgh to the southward of the castle; by which means you will avoid the foul ground that lies to the westward of the rock.

W. S. W. 16 miles from Warburgh and E. by N.  $\frac{1}{2}$  N. from Anholt, lies a bank, which has but  $4\frac{1}{2}$  fathoms water upon it for several casts of the lead: to the northward of this bank is 25, 20, 18, and 14, fathoms; upon the bank, 11, 9, 7,  $4\frac{1}{2}$ , then 6, 9, 12, and off the bank, to the southward, is 15, 16, and 20, fathoms.

To the S. W. of this bank lies another, about 5 miles distant, (coarse sand with black specks,) that has not above 9 or 10 fathoms upon it. This bank lies E. by N. from Anholt-reef 6 or 7 miles.

**WADERO ISLAND AND HARBOUR.** N. E. 8 miles from the Koll lies the island and harbour of Wadero or Swadero; but it is not good with northerly or N. N. E. winds, which blow right into the harbour. The island Swadero is low and full of reeds, but upon the main, to the eastward of the island, lies some high land called the False Koll, which, in thick and hazy weather, may be taken for the Koll, as a deep bay runs in between the two head-lands S. W. by S. 4 leagues to Engleholm. If you should get into this bay by mistake, anchor as soon as you get into 9 or 10 fathoms water, lest you get aground and lose your ship.

The wind at Weit, W. S. W. or S. W. being off the Scaw, haul up S. S. E.  $\frac{1}{2}$  E. or S. E. by S. 9 or 10 leagues, which will carry you clear to the eastward of the Trindle, which is very dangerous, having only 3 or 4 feet water upon it, but it is of small extent: the depth of water between this and the Scaw is from 23 to 18 fathoms; off the Trindle you will have 23 fathoms; 15 or 16 is close to it. The Trindle lies from the Scaw light-house S. E.



S. E. by S. 26 miles, from Wingo S. S. W.  $\frac{3}{4}$  W. 19 miles, and from the East end of Leflou N. E. 8 miles.

From the Trindle N. N. E. 2 or 3 miles lies a bank with 4 or 5 fathoms water.

Being past the Trindle, (to which you must come no nearer than 20 fathoms,) haul up S.  $\frac{1}{2}$  E. 14 or 15 leagues, which course will lead you without the reef that lies E. from the East end of Anholt; it runs off 5 miles from the island, and is steep-to: when you have Anholt-light eastward, you will be abreast of the reef, and when you bring it W. by N. or W. N. W. you are to the southward of it. In standing up between Leflou and Anholt, haul no farther to the westward than 20 or 19 fathoms, for 16 or 17 is to the westward of Anholt-reef, the outer part of which lies N. N. W. 12  $\frac{1}{2}$  leagues from the Koll.

After you have passed Anholt-reef, your course to the Koll is S. by E. 13 leagues; but do not haul up too far to windward, lest a current should set into the Belt, by which means you get upon the Lyse-ground, which lies W. N. W.  $\frac{1}{2}$  W. 6  $\frac{1}{2}$  leagues from the Koll, and from Anholt lights S.  $\frac{1}{2}$  E. 9 leagues.

THE KOLL. The Koll is a remarkable black and mountainous land, divided into 3 hills, which, at first making, in clear weather, appear like three islands. Upon the N. W. point is a light-house, and the only building there. It is steep-to, having 14 or 15 fathoms close to the land, between which and the coast of Zealand you will have 13 or 14 fathoms, regular soundings; across and between the Koll and Lyse-ground, 15 or 16 fathoms to 10 or 8 close to the latter.

Running round the Koll, and bringing the light-house E. about 2 miles, you will have about 16 or 17 fathoms; then steer up S. S. E. or S. S. E.  $\frac{1}{2}$  E. if you have the wind off the Swedish shore, or S. by E. if you have the wind to the westward.

But, having the wind to eastward, be careful of the Swinebodens, which are shoals and sunken rocks that lie S. S. E. and N. N. W. near 6 miles along-shore, and 1 mile and  $\frac{1}{2}$  distant from it: the body of them lies W.  $\frac{1}{2}$  N. from a spire steeple, named Westbye-church, (and, by some English mariners, Swynne:) but if you keep the spire and some small part of the body of the steeple above the land within it, you will go without them, in 10 or 11 fathoms; nearer to them than that depth you must not come.

From the Koll up to the Hammer (or King's) Mills you will not have above 14 or 15 fathoms water; but, with the wind westerly, you may haul up along the coast of Zealand in 8, 9, or 10, fathoms water, observing that there are two light-houses erected upon a head-land, called Nakke Hovet, though no lights are kept in them: these houses kept on with each other, or the head land, upon which they stand, being kept open with all land above it, till you open Huen-island with Cronenburgh-castle, will lead you along-side the Lap-sand, in 9 or 10 fathoms water.

The Lap-sand begins just above the Hammer-mills, and runs up nearly to the castle: it has gradual soundings, except abreast the shoalest part, which lies the farthest out. Before you come up to it, open the westernmost part of Huen-island: when you are abreast of this part of the sand, you will have the westernmost wind mill upon the king's palace: here the channel is but 1  $\frac{1}{2}$  mile over; and, with this mark on, standing over, you will have deep water, 12, 14, 16, 18, and 19, fathoms; then put about, for you are near the bank which lies off the Swedish shore, in that place, near  $\frac{1}{4}$  of a mile.

If the current run to the northward, and a scant wind, you will come to an anchor under the Lap-sand below the Hammer-mills, and

and abreast of a small thatched house, or barn, which stands among some trees by the water-side, in 7, 8, or 10, fathoms water.

But, if the wind be free, after you get Huen island open of Cronenburgh castle, you may haul in for it, keeping from the castle about a cable's length; then in for the road S. by W. or S. S. W. where you may anchor in 10 or 9 fathoms water: bringing Cronenburgh castle N. or N.  $\frac{1}{2}$  E. and the tower at Helsingburgh E. by N. you may anchor upon the Bank, in 4, 5, or 6, fathoms water; but here the bottom is a hard sand, and no good holding-ground: but, in deep water, as 9, 10, or 11, fathoms, you will have a strong clay, consequently good holding-ground.

*Directions from the Sound to Orford-Ness and the Downs, also North about, round Scotland, the Orkneys, &c.*

**I**F you are in Elfsineur road, and bound to the northward round the Scaw, running round Cronenburgh castle, keep the island of Huen the southernmost part open till you bring the westernmost mill on with the king's palace, or till you open the headland upon which the light-houses stand upon the Zealand coast: then steer N. by W. or N. N. W. for the Koll, 14 or 15 miles, when you will have the light-house E. from you: after which, a N. course 20 leagues will carry you abreast of the Nyden lights; then steer N. by W. 7 leagues, and you will be near midway between the Trindle and Wingo-Island, whence you may steer your course into the Sleeve N. N. W. the Scaw at that time bearing N. W. 8 or 9 leagues. But, if the wind should take you short between the Koll and Warburgh, after you are past the island of

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Sweedro, you may stand to the Swedish shore in 10 or 11 fathoms water, a clean coast, but no harbours, and to the westward of the Koll 5 leagues: but stand not too far, lest you get upon the Lyse grounds. Here across you will have 15 or 16 fathoms, regular soundings. In working down, you may stand 12 or 14 miles each way, as low as Wingo. But, in the summer season, you may stand farther over to the westward, between Anholt and Lefiou, which is all flat, from 12 to 10 and 9 fathoms. The reefs of these islands are nearly 10 leagues distance from each other. But, in the winter, if you cannot get harbour, it is best to run back into Elfsineur road, rather than beat in the Cattagat.

The SLEEVE. After you are round the Scaw, and entered into the Sleeve, if the wind be westerly, or in the S. W. quarter, stand over upon the coast of Norway, and beat down upon that tide, as the current there generally runs to the westward, and, in fair weather, you may get down to the Naze: but, if it blow, it is more adviseable to take a harbour, as the harbours, which are shut with a westerly wind, are open to any wind with which you can run over the North Sea: and, as the pilotage is very low, you will save double the expence in wear of your canvass and rigging.

*Necessary Observations concerning the Rates of Pilotage of Ships into and out of the Ports and Harbours in Norway, from the King of Denmark's Laws for Pilots throughout his Kingdom of Norway.*

Ships of a deep draught of water, viz. frigates, brigs, snows, billanders, schooners, cats, &c. and all sharp-built vessels whatever, shall pay, for pilotage into or out of harbour, when the distance



*Rates of Pilotage in Norway.*

distance does not exceed one Norske mile from the outer rocks, as follow :

Ships, drawing	Feet.	shall pay, sterling,	l.	s.	d.
4, 5, or 6,			0	4	8
7,			0	6	0
8,			0	7	4
9,			0	8	8
10,			0	10	0
11,			0	11	4
12,			0	12	8
13,			0	14	0
14,			0	15	4
15,			0	17	0
16,			0	19	0
17,			1	1	4
18,			1	4	0

But, if a ship draws more than 18 feet water, then, for every foot above, you must pay one rix dollar, or four shillings English; but, if from the outer rocks it is more than one Norske mile, then you are to pay extra pilotage, as in the table of inland pilotage following :

*Table of Inland Pilotage of One Norske Mile within the Rocks.*

Ships, drawing	Feet.	shall pay, each mile,	l.	s.	d.
4, 5, or 6,			1	6	
7,			1	8	
8,			1	10	
9,			2	0	

Ships, drawing	Feet.	s.	d.
10,		2	3
11,		2	4
12,		2	6
13,		2	8
14,		2	10
15,		3	0
16,		3	2
17,		3	4
18,		3	6
19, and above, 1 rix-dollar		4	0

But, if the distance exceeds 4 miles Norske, then to pay, for every mile above the 4 to 8 miles Norske, one third less, and, when the distance exceeds 8 miles, then, for every mile above the 8 miles, one fourth less, than in this table of rates, the first or sea mile to pay according to the rates of pilotage in the first table.

Flat-bottom vessels of whatever denomination, that carry lee-boards, and are four times as long from stem to stern as they are broad in the midships, from the outer part of the gunwale of one side to the outer part of the gunwale on the other side; also all clinker-built one-mast galliots and galleseas, whose breadth as above are more than one-third of the length from stem to stern, shall, in the summer season, pay half as much more, when the distance does not exceed one Norske mile, than a ship of deep draught of water.

*N. B.* The foregoing rates of inland pilotage are for the summer half-year; in the winter half-year, all ships pay one fourth more pilotage in and out. The winter half-year begins the middle of October, and ends the middle of March. If

If it should happen, that, after you are piloted out of any harbour, and the wind shifts, so that you are obliged to go back again, the pilot, if on-board, is to conduct you into any port he can fetch, within his district, free of all charges; but, if he has left the ship, and not out of sight, he is entitled to half pilotage, and in either case he is entitled to half pilotage out again; but, if he has quitted the ship, and out of sight, then, if he comes on-board again, he is entitled to whole pilotage as above. Pilots, when they remain on-board, are to be dieted with the ship's company; and, in case a pilot is carried to sea by storm or accident, he is to be paid three marks Norway currency, that is, three shillings sterling, per day. When a pilot carries a ship into a harbour, he is not to leave her till her sails are furled and the ship properly moored, nor quit her, outward-bound, till she is without all danger of rocks, &c. Pilot-boats may be known by the middle cloth of the mainsail being painted red from head to foot; and, when they do not use a sail, they have a white flag upon the top of a staff. It is not permitted to any other boats whatever to carry such sail, or signal, under the forfeiture of four rix-dollars and loss of the sail.

*N. B.* A rix-dollar is four shillings sterling; and a Norske pilot's mile is equal to four miles English or one Dutch.

**COURSE WHEN IT IS NOT INTENDED TO TAKE HARBOUR.** But, in the summer season, when you do not intend to take a harbour, stand over from Norway towards the coast of Jutland, till you get upon the edge of the bank that runs from the Scaw (and joins the Jutish reef) into 40 or 45 fathoms, and then tack, as, farther to the southward, you generally find the current set to the eastward.

**NAZE to the BRITISH CHANNEL, &c.** Being down to

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the Naze with a fair wind, and bound to London or the British channel, if in the winter steer W. S. W. 70 leagues, when you will come into shoal water, upon the Dogger bank, 16, 17, or 18, fathoms water; then you are certain you are to the westward of the Texel, and a South course made good; *i. e.* a S. S. W. course, by the compass, will carry you over the Dogger bank; crossing which you will have 16, 15, 13, 11, and then again 14 to 20 and 24, fathoms. After you have run 17 or 18 leagues this course, you will fall into deep water, in the great Silver-Pits, where you will have from 35 to 40 fathoms water. Observe, after you have run 4 or 5 leagues, to sound for the Well bank, upon the North edge of which you will have 26 or 28 fathoms stony ground. This bank has irregular soundings, the easternmost part, the deepest, having 23, 24, and 26, fathoms; on the middle of the bank are 16, 18, and 20, fathoms: the S. W. side is the shoalest, having 11, 12, and 13, fathoms: the soundings are variable; sometimes fine sand, which you generally have upon the S. W. end; in some parts, sand with black specks; and, in others, coarse ground, especially to the eastward: on the S. side of the bank you will have olive-coloured sand, 16 or 18 fathoms. This bank is 11 leagues over.

After you come to the South side of this bank, which lies in lat 53 deg. 36 min. N. continuing the said S. S. W. course 6 or 7 leagues will run you over the Swart bank to the Brown bank. Upon the Swart bank you will have 15, 16, 17, or 18, fathoms water, dark soundings, rather inclinable to black: between which and the White Water, and between the White Water and Well bank, are 23 or 24 fathoms, soft mud.

Upon the Brown bank you will have the same depth of water as upon the Swart bank, but fine brown sand: after which, if the wind



wind is northerly, you must haul to the westward for Lowestoff, or between that at Orford-Nefs; when, after you fall off the Brown bank, you will have 24 or 25 fathoms, and then 27 and 28 fathoms in the deep-water channel, abreast of Smith's Knowl.

LEMON and OWER. In coming off the Well bank, and you are to the westward in 12 or 13 fathoms, and deepen your water gradually to 15, 16, 17, 18, and 19, fathoms, you are near the Lemon and Ower, but without them; but, if you should deepen your water suddenly, in 17, 19, and 23, fathoms, you are in the stream of those sands, and must steer out S. E. or S. E. by E. to go clear of them. After you are clear of the sands in regular soundings, 20 or 22 fathoms, steer S. by W. 9 leagues for Smith's Knowl, which, as before observed, lies E. N. E. 10 leagues from Lowestoff, and is about 2 miles in length and 1 in breadth, with  $3\frac{1}{2}$  fathoms water upon it. There are 27 or 28 fathoms, dark soundings, near the outer side of it; within and between it and Lowestoff, you will have 25 to 18, 14, and 12, fathoms in shore, to the southward of Lowestoff-Nefs.

If you are bound for London, follow the directions given in pages 57, 58, 59, &c. If for the Downs, follow the directions given in page 69, &c.

But, if you are upon the Brown bank with an easterly wind, keep your course S. S. W. till you fall into 24 or 25 fathoms water, then you will be 9 or 10 leagues S. E. or S. E. by S. from Smith's Knowl, or Orford-Nefs will bear W. by S. 20 leagues: then, in steering for Orford-Nefs, after you come off the Well bank, you will have 25 or 26 fathoms, and, in the deep-water channel, 29, 30, or 31; the farther to the southward, the deeper the water; coarse ground, with stones, mixed with scollop-shells, are the soundings you will have above the Garbart. The West side of this deep water lies about 6 or 7 leagues from, and

parallel with, the coast of Suffolk, any where between Lowestoff and Aldborough; from it you will have gradual soundings to the shore, 24, 20, 18, 16, 12, 10, 9, 8, fathoms.

COURSE for the BRITISH CHANNEL, DOWNS, &c. But, if you are bound into the British channel from the before-mentioned part of the Brown bank, steer S. W. westerly 35 leagues, and it will bring you into a fair birth between the Flemish banks and Goodwin sand; but, if you intend for the Downs, then 35 leagues S. W. by W. will be in a fair way between the Kentish Knock and Galloper, and from thence S. W.  $\frac{1}{2}$  W. 7 leagues to the North Foreland, and S. W. 8 leagues to the Gull-Stream.

But, in the winter season, for those ships bound to London, it may be more adviseable, in some respects, to make Flamborough Head, or some other part of the Yorkshire coast, and then proceed as directed in page 56, &c.

Flamborough Head bears from the Naze of Norway W. S. W.  $\frac{1}{4}$  W. 112 leagues: after you have run this course 40 leagues, you will have 26 to 29 fathoms, fine yellow sand, upon the body of the Long Bank: at the distance of 70 leagues, you will come upon the North side of the Dogger in 23 fathoms; then, in running 16 leagues over the N. W. end of that bank, you will have 20, 17, 13, 16, 20, fathoms, dark-coloured sand, sometimes intermixed with black specks: going off the bank, you will have 25 fathoms, white sand; then 30, 35, and 30, fathoms towards the Head, dark brown sand with black specks: but, if you come off the S. W. end of the Dogger, upon it you will have 10 or 11 fathoms; and, between it and the Sporn and Holder-Nefs, from 25 to 27 fathoms, white sand.

*Directions*

*Directions for the Coast of Scotland, Orkneys, &c.*

**NORTH-ABOUT PASSAGE.** Ships, bound for the West part of Scotland, Ireland, Liverpool, &c. in time of war, generally go North-about: then, if you are at the Naze of Norway, your course to Duncansby Head is N. W. by W. westerly 125 leagues. Duncansby Head lies upon the South side of Pentland Frith, which is the passage between the coast of Caithness and the Orkney Islands into the western ocean. In entering this Frith, leave the Pentland Skerries to the northward of you, which lies from Duncansby Head E. N. E. 4 miles; and, when you have entered the Frith, steer N. N. W.  $\frac{1}{2}$  W. 5 or 6 miles for the North end of Stroma island, which you must leave to the southward, having great regard to the velocity of the tide, which, in springs, runs 9 knots, though in neaps not above 3 or 4. The island of Swona lies from Stroma N. E. by E. nearly one league distance; they are both clean, but very strong eddies under the East side of them upon a flood, and upon the contrary side with the ebb; but, on the East side of the island Stroma, you may anchor or stop a tide by working in the eddy, if you have a foul wind or so little that you cannot stem the tide. The course, from between Stroma and Swona to a fair way between Dinnet Head, upon the coast of Caithness, and Thurness, upon Hoy island, is W. N. W. or W. N. W.  $\frac{1}{2}$  W. 8 or 9 miles, which will bring you to the West entrance of the Frith: thence a W. N. W.  $\frac{1}{2}$  N. or N. W. by W. course will run you between Cape Wrath and the Stack and Skerries: they bear N. E. by E. from Cape Wrath 9 leagues, and from Hoy Head N. W. by W.  $\frac{1}{2}$  W. 8 leagues.

There are many passages, sounds, &c. which go through the islands of Orkney, in which is a great number of excellent har-

bours; but, if you are not acquainted, it is best to take a pilot. In the Orkneys you may procure a pilot for the Highlands and Western Islands of Scotland, to the Irish Sea, to Liverpool, Dublin, &c.

To go between ORKNEY and SHETLAND. If you intend to go through between the isles of Orkney and Shetland, you will go between North Ronaldsea and Fair Island, or between Fair Island and Sumborough Head, the South part of Shetland. Fair Isle is very high land, and clean all round it within a cable's length; it lies E.  $\frac{1}{2}$  S. 8 leagues from North Ronaldsea, and from the South end of Shetland S. W.  $\frac{1}{4}$  W. 7 leagues.

**STROMNESS.** The best harbour for ships bound to the westward is Stromness, which is a place of greatest resort for shipping that are strangers.

The tides, in a common spring, rise, in the Orkneys and Pentland Frith about 8 feet, and the neap-tides 4 feet; and, in all parts of the Orkney islands, it flows 9 or 9 $\frac{1}{2}$ , full and change. In the Pentland Frith and Hoy Mouth, upon the springs, it runs with the velocity of 9 miles an hour, though, upon the neaps, not above two or three: but, among the northern parts of these islands, in the springs, it does not run above 5 or 6, and 2 miles an hour upon the neap-tides; the direction of the tides is very various, according to the different sounds, bays, &c. into which it sets or runs through. The flood comes from the westward, and the ebb the contrary.

*Directions for Shetland.*

**SUMBOROUGH HEAD**, the South part of Shetland, lies 45 leagues N. N. E.  $\frac{1}{4}$  E. from Buchan-Ness, in Scotland; and,



and, from Sanda island, in the Orkneys, E. N. E.  $\frac{1}{2}$  E. 16 leagues; and, from Fair island, N. E.  $\frac{1}{4}$  E. 7 leagues. To the North-westward of Sumborough Head lies Fitfill Head, which is very high land, as are most parts of the island of Shetland. Between these is an anchoring-place called Quendal bay, before which lies Cross island; you run in N. E. between this island and Fitfill Head, and anchor in 8 fathoms on the West side; here you are sheltered from all but S.S.W. S.W. and W.S.W. winds.

To the eastward of this, and between Scatenefs and Sumborough Head, lies another small place, called West Voe, where you may anchor in 7 or 8 fathoms.

**COURSE from SUMBOROUGH HEAD to MOUSA ISLAND.** From Sumborough Head to Moufa island the course is N. E.  $\frac{1}{4}$  E. 15 miles. Between these are several inlets of the sea, only fit for small vessels in the summer, the first of which is East (or Greatness) Voe, where you may anchor in 3 or 4 fa-

thoms water. Between 3 or 4 leagues to the northward is an inlet of 1 mile in width, in which are 2 bays, Lewinwick and Sandwick, where small vessels may ride in 7 or 8 fathoms; and within Moufa island is a small inlet called Aeths Voe, but in it are not above 10 or 12 feet.

From Moufa island to the Bard of Brassey, or Brassey Head, the course is N. N. E.  $\frac{1}{2}$  E. or N. E. by N. 9 or 10 miles; the entrance of Brassey Sound is easy to be known by the 2 islands of Brassey and Nofs, the first of which is remarkably high in the middle, and ends with a declivity to the westward; but, to the eastward, with a perpendicular cliff. The isle of Nofs has an acclivity from the West end to the East, which terminates with a high cliff that overhangs the sea, and therefore is called Hang-Cliff.

Thus appears Brassey island, when you are abreast of Moufa island, then bearing N. N. E.



**BRASSEY SOUND.** Being bound into Brassey Sound, you may run, without fear, round the West side of Brassey Island into the sound, the entrance of which is half a mile broad; and run in, N. E. by N. till you open Lerwick; then N. by E.

after which, run up and come to an anchor off the old fort in 8, 9, or 10, fathoms; then you will have the holm of Cruister N. or N. by E. and the old platform, or fort, W. N. W. or W. by N.

N. This sound lies N. W. by N. and S. E. by S 3 miles in length and 1 mile in breadth. This is a harbour of the greatest resort in Shetland, as being well sheltered from all winds, having good anchorage, and being sufficiently large to contain a fleet of his majesty's ships, and has been the resort of the English and Dutch white-herring fishery. But here, as well as in the Orkney isles, is little to be purchased, except poultry, eggs, milk, and fish, which are in great plenty. Numbers of the inhabitants speak Dutch.

NORTH SOUND. But, if you are bound out to the northward, through the North Sound, (which will not be prudent to attempt with a ship of above 16 feet water, and then not without an inhabitant as pilot,) keep the main land on-board, which is bold, till you have passed the small island, or holm, called Cruester; for, mid-channel from that holm lies the Loofaber, a sunken rock, and is one mile from the town; after you have passed this rock, you will observe, that, in the first narrows, which is little more than a quarter of a mile over, is a middle ground of 15 feet water, though on each side are near 3 fathoms; but it is best to keep towards the main, it being steep to. After you have passed this narrow, you open a bay on either side, and have another streight to pass, little more than 2 cables length over; keep close to the westward, and very near the small island called Scotland, to avoid a ledge of rocks, that runs out from Brasseley,  $\frac{1}{2}$  channel over. Here are about 3 fathoms at low water. After you are clear of these dangers, steer E. by N. or E. N. E. to sea, leaving the Boesters to the southward, and Green Holm to the northward, of you. This passage is not to be attempted without a breeze and a leading wind.

Upon the N. E. side and North parts of the islands of Shetland are several other good harbours, four of which lie between the

isle of Brasseley and the Mull of Eswick. Deal's Voe is the southernmost; then Laxfrith Voe, Wadbester's Voe, and Catfrith Voe. Coming from the northward, and having passed the Out-Skerries, haul in S. W. by W. 13 or 14 miles for the Rumble, then W. S. W. 10 miles towards Eswick Mull, which will lead you between the House-Stack, a high round rock, and the Green Holm, a small island. (These are about 2 miles distant from each other, and between them is 40 fathoms water, clear on either side.) Then haul up W. N. W. for an island lying near the main, and seemingly joined, called Glitnefs, by which you will avoid a rock, called the Toagrode, which lies N. N. E.  $\frac{3}{4}$  of a mile from Kibester's Point, which is the South point into the four Voes, as Glitnefs island is the northernmost. These Voes are all clean and good anchoring-ground.

The FOUR VOES. Deal's Voe lies in S. W. by W.  $1\frac{1}{2}$  mile; and you may anchor in from 10 to 5 fathoms water, mid-channel: the higher up the less water. — Laxfrith Voe lies W. S. W. or S. W. by W. the anchorage, &c. is the same. — You may anchor in Wadbester's Voe in 7, 5, or 3, fathoms; this Voe lies W. — But Catfrith Voe is the best by far, and will contain upwards of 100 sail. You anchor, all over the Voe, in 7, 6, or 5, fathoms. The course in will be from N. to N. N. W.

OTHER HARBOURS. Besides these harbours upon the main island of Shetland, to the eastward are several others, upon the island of Yell, two upon the island of Unst, (the North-eastmost of Shetland,) and in the Out-Skerries is a good harbour for small vessels.

The W. and N. W. parts of this island have not so many harbours; they are, at least, very little known. The principal of them are Scalloway, Valley Sound, and Grueting Voe.

Between



Between Fitfill Head and Scalloway are several places where you may anchor, but none that are good; and, from Fitfill Head to the entrance of the different sounds or passages into Scalloway, the course is as follows: from the Head to Havery island the course is N. E. by N. 3 leagues. This island lies on the West side of the entrance into Cliff Sound.

**CLIFF SOUND.** Cliff Sound is from 1 mile to  $\frac{1}{2}$  a mile in breadth, and you may anchor in it from 15 to 5 fathoms water. This sound lies up N. N. E. or N. E. by N. but, in running up, keep the West shore (or House island) rather nearest to you; when you are above House island, and abreast of Tondary island, then run along the East shore, to avoid the shoaliest part of the bar, upon the best of which is not above 12 feet water.

**COURSE from FITFILL HEAD to OXNAY ISLAND.** — But, from Fitfill Head to Oxnay island, the course is N. by E.  $\frac{1}{2}$  E. 17 miles; between which and Burra island is the best channel to go into Scalloway: leave Oxnay and Papa islands on the starboard side, and bring the Scalloway castle E. N. E.  $\frac{1}{2}$  E. which is your course in, and you will observe a high round island called Green island: keeping the castle just open to the southward of it will lead you between it and a very small island, called Merry Holm, which you leave on the starboard side. They are near together, having but 4 fathoms water between them. Then steer for the castle, and anchor before the town in 5 or 6 fathoms: the bottom is a fine sand. There are also 2 other channels to the northward of this, but difficult and crooked.

The first and southernmost is by leaving Oxnay island, and the adjacent islands, called the Chains, on the starboard side, as you do Papa, leaving Heldazoo and Longa on the larboard side. The course in is E. by S. E. S. E. and S. E. by E. but, after passing Longa island, steer farther to the eastward, to avoid 3

island-rocks, which lie to the northward of Green island. After you have passed them, run to the southward till you open the castle, and then go in and anchor before the town.

You may also go in to the northward of Heldazoo island, between it and Sandistura island, which are barren rocks; but Heldazoo is bold, and a mile in length: they lie from each other N. E. and S. W.  $\frac{1}{4}$  of a mile distance. Then steer for Longa island, leaving it on the starboard side, and proceed as before directed.

**VALLEY SOUND and GRUETING VOE.** Valley Sound and Grueting Voe lie near each other, and bear from the entrance of Scalloway N. N. W. 10 or 11 miles. Just to the southward of the entrance into Grueting Voe, upon the main, is a remarkable hill, and upon it an old ruinous tower or castle in a circular form: keep this hill and castle on the starboard side. — Running in between the small island of Flafs and Valley island, leave Valley Sound to the westward of you. The entrance is very narrow, and not to be discovered till you are nearly in, but it has deep water. You may haul round by the North shore, and steer E. N. E. and N. E. by E. till you are land-locked; then anchor in 7, 10, or 14, fathoms.

Valley Sound hath 2 entrances, but the East sound is by far the best. If you are for this harbour from the westward, and with the wind between the S. and W. steer direct for the East end of Valley island, which is bold-to and high land, but it is best known by the before-mentioned hill and ruinous castle that stand just to the southward; then steer N. by E. and N. into the sound. — Leaving Flafs island on the starboard side, as you also must Linga island, which lies in the harbour, steer N. or N. by E. into Valley Sound, and anchor in 6 or 8 fathoms water. The West channel

channel or sound is dangerous, without you are well acquainted with it.

N. W. by N. from Fitfill-head 11 leagues, lies Fula-island. This island is very high, and foul round about, especially the North end. S. E. 2 leagues from it lies a ledge of sunken rocks (called Havedegrind) which have but 4 feet water. These rocks lie N. W. by N.  $\frac{1}{2}$  N. 9 leagues from Fitfill-head, and W. N. W. from the entrance into the Scalloway, 7 leagues.

The tides flow here, full and change, 9 hours or  $9\frac{1}{2}$ , and rise, upon the springs, 6 or 7 feet, and upon the neaps 4 or 5. On the East coast is very deep water, 120, 140, and 150, fathoms, within 2 leagues off the shore; and you will not be above one league from the shore in 35 or 40 fathoms.

*Farther Directions for Shetland, &c. adapted to the Fourth Chart of the Complete British Pilot\*.*

### LOCH ERIBOL.

**L** OCH Eribol is the only place for strangers to shelter in between Orkney and the Lewis; this Loch is all clean; in going in you leave the island Haa on the starboard, and Whiten-head on the larboard side. The Whiten-head is a low bluff point of a whitish colour, and makes with two ascents like steps.

\* *This work comprehends the coasts of England, Scotland, Ireland, and the North Sea, in nine capital and correct Charts, from actual surveys and extensive experience, by the author of these directions. Printed for D. Steel, No. 1, Union-Row, Little Tower-Hill. Price 7s. 6d. each chart.*

The land to the eastward is high and regularly formed; highest in the middle. Occasionally, you may borrow near Whiten-head; and, after you are entered, steer up S. S. W. to a small island at the head of the Loch, above which you may anchor in 6 or 7 fathoms water.

**EAST SIDE OF SHETLAND.** If you are coming from the southward, and bound into Brasseley-sound, after you are abreast of Moufa-island, the course to the Bard of Brasseley is N. by E. 3 leagues. Leave the islands of Brasseley and Nols on the starboard side. The entrance into Brasseley-sound is about half a mile broad, deep water, and clean, without danger. After you are in, anchor just above Lerwick, abreast the fort, in 7, 8, or 10, fathoms water; where you will be entirely land-locked. The sound is about 3 miles long and 1 broad, and lies N. W. by W. and S. E. by S. It flows here  $9\frac{3}{4}$  full and change. From this is a passage out to the northward; but, as it is very narrow, and not above 17 feet water, it is best to take a pilot.

Between Brasseley-island and the Mull of Etwick is the inlet into four harbours or voes in main-land, viz. Catfrith-voe, (which is the best, and capacious enough to contain a large fleet of the largest ships,) Wadbeister's-voe, Laxfrith-voe, and Deal's-voe, all clean, and you may anchor in either of them from 10 to 5 fathoms water. But, in sailing in, be careful of the Toagrode, a half-tide rock, which lies N. three-quarters of a mile from Kibbeister's-point, and, to avoid it, keep over towards Glitneis-island. There are several other harbours on this side of Shetland, which are distinguished by anchors marked upon the chart.

**WEST SIDE OF SHETLAND.** The entrance of Cliff-sound is 8 or 9 miles to the westward of Fitfill-head: go in between the islands of St. Ranan and Havery. This sound lies N.

M.

by E.



by E. 10 or 11 miles in length. Having House-island to the westward, and Cliff-hills upon main land to the eastward, there is good anchoring, from 15 to 5 fathoms water, over towards House-island. Through this sound is a passage for small vessels to Scalloway, but for no other, as there is a bar between Tondra-island and the main land of 2 fathoms water.

The best channel into Scalloway is between Burra-island and Oxna and Papa islands. Bring the castle N. E.  $\frac{1}{2}$  E. and it will then be just open to the southward of Green-island, which is high and round: keeping it thus will lead you between Green-island and the small island called Merry-holm, which you must leave on the starboard side. There is 4 fathoms water between these islands, which lie near together. After you have past them, run in and anchor before the town, in 4 or 5 fathoms water. You may also go in to the northward of Oxna and Chaios-islands, between them and the island of Heldazoo, which you must leave to the northward, as well as the island Longa. After you are past Longa and Papa, which must be left to the southward, steer E. by N. and leave three island rocks on the starboard hand, which lie to the northward of Green-island. After you are past these rocks, stand to the southward till you open the castle, then run in and anchor as before. You may also go to the northward of Heldazoo-island, leaving the Sandistura rocks to the northward. These island rocks lie N. N. W. nearly one mile from Heldazoo. Then leave Longa-island to the southward, and proceed as before.

**VALLEY-ISLAND-SOUND.** Valley-island-sound is also a good harbour, and has two entrances into it. The West sound

is difficult to strangers, as a rock lies in the middle: therefore it is best to go into the East sound. Steer in for the S. E. of Valley-island, which is high and bold; and upon the main land, about a mile to the eastward, stand the ruins of an old round castle; this castle stands very high, and is an excellent mark to know the land by. In sailing in, leave Valley-island to the westward, and the rock called Flafs-island to the eastward; then steer N. by W. and N. N. W. into Valley-sound; in which you will observe that Linga-island must be left on the starboard side, then haul to the northward of the island, and anchor in 9, 7, or 6, fathoms. But do not anchor too near the North shore, by which you will avoid a sunken rock that lies there.

**GRUETING-VOE.** Just to the eastward of Valley-island lies Grueting-voe, another excellent harbour, where you may anchor, land-locked, from 14 to 5 fathoms water. If you are bound in, steer as before between Valley-island and Flafs-island towards Green-head, which, with Valley-sound, you must leave to the larboard, and the old castle upon the starboard side. When you are the length of Green-head, you will see the harbour open; the entrance is deep water, 20 or 18 fathoms. After you are in, run up N. E. or N. E. by N. and anchor where you please.

If, with a westerly wind, you should be imbayed in St. Magnus's-bay, and cannot get out, the only resource you have, to save the ship, is, to run in between Muckle-roe-island and Vamantree-island through Swarback's-mine, which is an inlet to several harbours, and you may anchor any where within these islands from 20 to 15, 9, or 8, fathoms.

*Bearings of, and Remarks on, the principal Flags and Shoals in the GULPH OF FINLAND, from the Harbour of Cronstadt, St. Petersburg, to the Island of Dagerfort, the Entrance of the Gulph of Finland.*

1. **F**ROM the N. W. part of the fortification of Cronstot stretches off a small reef, on which is a white flag; and from the opposite shore, a little W. of the citadel, is also a shelf, on which is placed a red flag; between which flags, in the fair way leading to Toll-beacon, your course is E. S. E. by the magnetic compass, distant 6 miles. In sailing up and down the Gulph, you must remember to go to the northward of all the white flags, and to the southward of all the red flags, which are laid in the month of May, and continue to the winter, but the lights only burn from the middle of August until the winter sets in.
2. From the island of Toll-beacon, (on which is a fire-light, lighted for the direction of shipping during the Spring and Autumn,) lies a shoal reef, with about 11 feet water on it. On the S. E. part of it is placed a red flag, in 4 fathoms, Toll-beacon bearing N. N. W.  $1\frac{1}{4}$  mile distant. The palace of Cronstadt S. E. by E. and Toll-beacon-church E. Abreast of this part lies the guard-ship, as also the custom-house yacht, which visit all vessels coming up and going down, and which you must not pass without being visited, under a severe penalty for disobedience. From hence to the island of Siskar (a low flat island) the course is W. by N.  $\frac{1}{4}$  N. distant 38 miles, and from which lies a very shoal and dangerous reef, with a white flag on the point of the reef, bearing N. W.  $\frac{1}{2}$  W. 4 miles from the tower and fire-light on the N. point of Siskar.
3. About E. S. E.  $\frac{1}{2}$  E. 10 miles from Siskar, lies a shoal,

called the Diamond-stone, with not more than 4 feet water upon it. The thwart-mark is Harweldie high-land E. and the W. point of Sokana S. W. Also about a mile to the N. E. and N. W. of the Diamond-stone are two shoals, with flags on them; on the one is 20 feet, and on the other 17 feet, with 8 and 9 fathoms water between the said shoals. In the night-time, or thick weather and contrary winds, standing to the southward, the Diamond-stone must be carefully attended to by the lead.

4. Upon the bank, betwixt the island Narva and Levanscar, is 10 feet, and a white flag on it. The bearings are as follow: the E. point of Levanscar S.  $\frac{1}{2}$  E. the W. point of Levanscar S. by W. the E. point of Penny S. E. the S. point of Hogland W. by S. and the highest point of the Summers N. W. by W.  $\frac{1}{2}$  W.

5. Besides the middle-ground there are two small banks, betwixt Narva and Levanscar, distant one from another  $1\frac{1}{4}$  mile; they bear each from the other N. W. by W. and S. E. by E. upon them there are only 17 feet water, and betwixt them are 12, 10, 8, and 5, fathoms water; upon the easternmost is a white flag, the bearing of which is, the W. point of Penny S. S. E. the E. point of Levanscar S. by W.  $\frac{1}{2}$  W. the W. point of Levanscar S. W. the S. point of Hogland W.  $\frac{1}{4}$  N. and the middle of the Summers N. W.  $\frac{1}{2}$  W.

6. Upon the W. ground you find 20 feet water, with a white flag: the bearings when you are upon it are, the W. point of Penny S. W. by S.  $\frac{1}{2}$  S. the E. point of Levanscar S. by W. and the W. point of Levanscar S. W. by S.

7. Due North from Hogland lie two small banks, upon which are but 2 or 3 feet water, and they are distant about 5 miles from Hogland.



8. N. N. W. about two miles from Hogland, lies a bank, with a red flag on it, where there are 23 feet water.

9. N. N. W. 8 miles from Hogland, lies Hogland-bank, upon which are 20 feet water.

10. Between 11 and 12 leagues W. by N. from Hogland, lies a bank, called the Kolboden, whereon are 11 feet, but about 4 cables length off are 4 fathoms, where there is a red flag. The bearings are as follow: upon Sibelsfabree, on the South Scars, is a beacon, 2 handspikes length to the westward of Levanscar, N.W. by N.  $\frac{1}{4}$  N. and Onnes Dyrctges East point N. by W. (by computation) 4 large leagues; the Peltingschars N. E.  $\frac{1}{2}$  N.

11. The reef of the Great Wranger lies with the light-house of Cockscar N. E. and the village on Great Wranger S. E. by S.

12. Upon the Devil's Eye are 11, 12, and 18, feet water, where is a red flag. The bearings are, the light-house of Cockscar E.  $\frac{1}{2}$  N. the North part of the Great Wranger S. E. the North part of the Wolf S. W.  $\frac{1}{2}$  S.

13. The New-ground lies between the Wolf and Cockscar, upon which are from 20 to 22 feet; and all round it stony, with 4, 5, 6, and 7, fathoms. The bearings are, the light-house of Cockscar E. N. E. the North part of the Great Wranger E. S. E. the North part of the Nargan W.  $\frac{1}{2}$  S. the North part of the Wolf S. W. by W. the red flag on the Devil's Eye N. E.  $\frac{1}{2}$  N. This shoal lies between 3 and 4 miles from Cockscar, and 8 from the Wolf.

14. Upon the Revel-stone are 6 feet water, where there is a red flag, in 6 fathoms. The bearings are, Olia tower, in Revel, a handspike's length to the westward of the Wolf S.  $\frac{1}{2}$  W. the light-house on Cockscar E. by S. easterly, the North point of Nargen S. W. by W. westerly. But come no nearer to it than 6 cables length on each side, as it is about that length round.

15. On the shoal betwixt Nargen and the Wolf are only 3 and 4 feet water, upon which is a red buoy. The bearings are, Olia-tower, in the town of Revel, S. S. E. the North point of Surrup and the South point of Nargen a handspike's length from each other, and the N. point of Nargen N. W. by W.  $\frac{1}{2}$  W.

16. On the other hand is a bank, with 3 fathoms water, E. by N. 3 cables length from the red buoy, and has a red flag upon it. The bearings are, the S. part of Nargen S. W. by W.  $\frac{1}{2}$  W. the North part of Nargen N. W. by W. Olia-tower and the red buoy of Nargen S. S. W. and the white buoy betwixt the Kaarls and Nargen S. by E.  $\frac{1}{2}$  E.

17. Upon the bank betwixt Nargen and the Kaarls are 12 feet, and it has a white flag upon it, about  $1\frac{1}{2}$  cable's length to the East part of it, in 5 fathoms water. The bearings are, Olia-tower, S. S. E. Briganteen-cloisters S. E.  $\frac{1}{4}$  E. the North part of Surp W. by S. and the North part of Nargen W. N. W.

18. Upon Nargen reef is a red flag, in 6 fathoms. The bearings are, Olia-tower S. E. Briganteen-cloisters S. E. by E.  $\frac{1}{2}$  E. the point of Surp W. S. W. the North part of the Wolf N. E. by E. the South part of Nargen N. W. by W.  $\frac{1}{2}$  W. the North part of Nargen N. by W.

19. Upon the shoal off the Great Roague are  $18\frac{1}{2}$  feet water, from which, about one cable's length N. N. W. is a white flag, in 6 fathoms. The bearings are, the light-house on Great Roague S. by W. the point of Little Roague S. W.  $\frac{1}{2}$  W. the high land of Surp E. or E. by N.

20. The grass-ground to the westward of Rogerwick, directly in the fair way, lies a rock, about 4 or 5 feet above water. The bearings are, the light-house on Great Roague E. by S.  $\frac{1}{2}$  S. the church in the bay to the westward of the Little Roague S. E. by S. easterly,

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21. On the bank to the eastward of Otkinsholm there are 9 feet water; to the N. W. of which, about  $1\frac{1}{2}$  cable's length, in 6 fathoms water, is a white flag, exactly 4 leagues from Otkinsholm. The bearings are, the N. point of Otkinsholm W. by S. southerly, the South part, where the three trees stand, S. W. the West part of the South land S.  $\frac{1}{2}$  W. the East part of the South land E. S. E. easterly.

22 Rickman's or Nickman's rock is about 3 leagues from Daggeroat, upon which are only  $9\frac{1}{2}$  feet; N. by W. from it, in 6 fathoms, is a white flag. The marks are, the light-house of Dagger S. by W.  $\frac{1}{2}$  W. the West point of Dagger S. W. the East of Sybergfnefs E. The light-house on Dagger does not stand near the sea, on the North side of the white cliff, as it appears, but nigh the middle between the North and South sides of the said white hill or cliff.

*A TABLE of the LATITUDES and LONGITUDES of the most remarkable Headlands, &c. in the NORTH SEA, CATTEGAT, and SOUND.*

			Latitude.		Longitude.					Latitude.		Longitude.	
			d.	m.	d.	m.				d.	m.	d.	m.
<b>S</b> OUTH Foreland	—	—	51	10	1	29 E.	Staples	—	—	55	47	1	41 W.
North Foreland	—	—	51	24	1	32 E.	St. Abb's-head	—	—	56	12	2	6 W.
Longsand-head	—	—	51	48	1	44 E.	Isle of May	—	—	56	25	2	20 W.
Naze	—	—	51	52	1	25 E.	Buchan-neis	—	—	57	55	1	37 W.
Orford-nefs	—	—	52	12	1	43 E.	Duncansby-head	—	—	58	40	3	15 W.
Lowestoff	—	—	52	38	1	56 E.	Kirkwall	—	—	58	58	3	13 W.
Winterton-nefs	—	—	52	52	1	50 E.	Mould-head	—	—	58	59	3	5 W.
Foul-nefs	—	—	53	14	1	43 E.	North Ronaldsea	—	—	59	23 N.	2	53 W.
Smith's Knowl	—	—	53	00	1	33 E.	Fair Island, North-end	—	—	59	31	2	28 W.
N. E. part of Lemon and Ower	—	—	53	26	1	27 E.	Sumburgh-head, South part of Shetland	—	—	59	50	2	11 W.
Dudgeon-light	—	—	53	38	1	20 E.	Brassey-head	—	—	60	14	1	51 W.
Sporn	—	—	53	47	0	23 E.	Mull of Efwick	—	—	60	27	1	51 W.
Flamborough-head	—	—	54	12	0	08 E.	Out Skerries	—	—	60	47	1	23 W.
Mouth of the Tees	—	—	54	45	0	53 W.	N. E. part of Shetland or Unst-island	—	—	61	15	1	42 W.
Tinmouth-castle	—	—	55	12	1	24 W.	Foula-island	—	—	60	12	3	32 W.



## COAST of NORWAY, SWEDEN, and DENMARK.

	Latitude.		Longitude.			Latitude.		Longitude.	
	d.	m.	d.	m.		d.	m.	d.	m.
THE middle of the States Land, Northernmost Boundary of the Narrow Seas, as settled by Treaties, in which Foreign Ships acknowledge the Superiority of the British Flag	62	15	4	35 E.	Koll	56	18	12	29 E.
The Whiting's Eye, at the entrance of Starvanger	59	10	5	44 E.	Cronenburg-castle	56	2	12	39 E.
Naze of Norway	58	0	7	24 E.	The Anholt-light	56	44	11	36 E.
Fader-Island	59	7	10	28 E.	Lessou East-end	57	19	11	6 E.
Maestrand	57	53	11	40 E.	Sea-point	57	43	10	38 E.
Wingo	57	38	11	43 E.	Bovenbergen	56	56 N.	8	24 E.
The Niden	57	18	12	0 E.	Helgeland	54	11	8	33 E.
Warberg	57	7	12	17 E.	Texel	52	10	4	49 E.
					Goree	51	50	4	3 E.
					Dunkirk	51	2	2	26 E.
					Calais	50	57	1	50 E.
					Cape Griñefs	50	52	1	35 E.

TIDE

*TIDE-TABLE for the NORTH SEA, the EAST COAST of Great-Britain, &c. upon the Full and Change.*

<i>Places Names.</i>	<i>Time of H.W. full &amp; change.</i>	<i>Flowing in Feet.</i>	<i>Places Names.</i>	<i>Time of H.W. full &amp; change.</i>	<i>Flowing in Feet.</i>
<b>D</b> OWNS	10 $\frac{1}{2}$	16	At the Dudgeon-light	7 $\frac{1}{2}$	
North Foreland	11 $\frac{1}{2}$	16	At the Sporn, in the Hawke, &c.	5 $\frac{1}{4}$	20
Margate-Roads	11 $\frac{1}{4}$	16	Hull	6	18
Five-fathom Channel	12	17	Burlington and Scarborough	4 $\frac{1}{2}$	13
Nore	12 $\frac{1}{4}$	17	Whitby	5 $\frac{1}{2}$	13
Gravefend	1 $\frac{3}{4}$	18	River Tees and Hartley-pool	3 $\frac{1}{2}$	14
London	3	16	Sunderland	3	12
In the Swin	12	16	Tinmouth-bar	3	13
Longsand-head	11 $\frac{1}{2}$		Blith	2 $\frac{3}{4}$	1 $\frac{1}{4}$
Harwich	11 $\frac{1}{2}$	14	Staples and Holy-island	2 $\frac{1}{2}$	15
Hosley-bay	11	11	Berwick	2 $\frac{1}{4}$	16
Aldborough-bay	10 $\frac{1}{2}$		In the Frith of Forth, at Leith, and } all the other Pier-havens }	2 $\frac{1}{4}$	14
Lowestoff-roads, tide and $\frac{1}{4}$ tide	9	8	Dundee	1 $\frac{3}{4}$	
Yarmouth-roads, ditto	8 $\frac{1}{2}$	8	Montrose	1 $\frac{1}{2}$	
Without Yarmouth-lands	10 $\frac{1}{2}$		Aberdeen	1 $\frac{1}{2}$	
Winterton-nefs, tide and $\frac{1}{4}$ tide	8 $\frac{1}{4}$	10	Buchan-nefs	12	
Foulness	9	16	Cromarty and Inverness	1 $\frac{1}{2}$	14
Lynn and Boston Deepes	6	20	Pentland Frith and Orkney-island	9 $\frac{1}{2}$	8
Open of the Deepes, at the Inner Dow- ing, and upon the Lincolnshire coast	5 $\frac{1}{2}$		Round the Islands of Shetland	9 $\frac{1}{2}$	6

The tides upon the coast flow in the offing one hour longer than in-shore; and upon the coast of Yorkshire the tide runs to the southward 1 $\frac{1}{2}$  or 2 hours after it is high-water upon the shore; at Winterton nefs the tide runs 2 hours after it has done flowing upon the shore; and in Lowestoff-roads, though it is high-water at 9 o'clock, yet the tide runs till 10 $\frac{1}{2}$  run and change.



*The Flowings of the Tide, Full and Change, upon the Coast of FLANDERS, HOLLAND, GERMANY, and JUTLAND, from Calais to Bovenbergen.*

<i>Places Names.</i>	<i>Time of H.W. full &amp; change</i>	<i>Flowing in Feet.</i>	<i>Places Names.</i>	<i>Time of H.W. full &amp; change.</i>	<i>Flowing in Feet.</i>
CALAIS	11 $\frac{1}{2}$	18	In the entrance of the Texel	6 $\frac{1}{2}$	
Gravelines	11 $\frac{3}{4}$	18	Texel road	7 $\frac{1}{2}$	
Dunkirk	12	18	Amsterdam	9	
Newport	12		The Flie	8	
Ostend	12	16	In the Ems	10 $\frac{1}{2}$	
Flushing	1		At Enibden	12	
Ferveer (or Campheer)	1 $\frac{1}{2}$		At the Key (or 1st buoy) in the Weezer	12	
Zirizea	1 $\frac{1}{2}$		At Helgeland	12	
Goree-Gat	1 $\frac{3}{4}$		In the Elbe (red buoy)	12	
Brill	3		Hamburgh	6	
Rotterdam	3 $\frac{3}{4}$		In the Eyder	12	
Maes	3		Along the coast of Jutland to Numet-island	12	

Along the coast of Flanders and Holland, the tide runs to the eastward three hours after high-water.

*ORDINANCE respecting the Ceremony of Lowering in the Sound.*

*N. B.* When the blue flag is hoisted at the guardship's fore-top mast head, then ships are free from lowering.

I. **A**LL ships sailing through Oresund, whether they come from the North or South, must lower their sails, and keep them lowered full five minutes, to pay proper respect to the castle. The salute is to be made whilst the northernmost church in El-fingoer enters or is concealed behind the castle, coming either from North or South. So that the lowering must not commence before the church goes in behind the castle, and must continue till the church opens itself without the castle again. Every person neglecting this duty must expect to be compelled, by cannon-shot, to the same, and to be fined, besides, for his contumacy.

*Remarks on the above article.*—When a ship lowers her sails on her first entrance into the marks, and keeps them lowered five minutes, though not come out of the marks, it is thought sufficient.

II. The sails to be lowered are as follows: ships carrying top-gallant sails, standing or flying, must lower the top-gallant sails entirely down on the cap: ships having only one top-gallant sail, and at the same time the fore-top sail, they must be lowered half-mast down: ships having no top-gallant sails, must lower both the top-sails on half-mast: all other ships, be they galliots, smacks, ketches, brigantines, or of what denomination soever, carrying only flying top-sails, must lower the top-sail entirely down: but those having no standing or flying top-sails, or which have all their reefs in their top-sails, shall be exempt from lowering.

III. When ships cruise through the Sound with a contrary wind, or when (with a scant wind or small breeze) the current is so strong against them that it would set them a-stern, if they lowered their sails, then it shall be made known to them, by hoisting the colours at the castle, that no salute is required, and that they may make the best of their way, without striking their sails.

*Remarks on the above article.*—The colours are not hoisted at the castle (that ships may be free from lowering) but when the blue flag is hoisted at the guard-ship's fore-top mast head, as before observed, except when the guard-ship is not there.

IV. When any vessel has been fired at, then the master or mate, with two of the ship's crew, must go on shore, and make declaration, on oath, before the court of inquest, for that purpose established, why they have not lowered in the time ordained or in the manner prescribed. If an oath be required that the lowering was performed in due time and manner, and it is depolled to by the master and his people, then will he be free from paying for the shot fired at him; on the contrary, should they not venture to take the oath, he must then pay, for each shot fired at him from the castle, 5 rix-dollars 20 flivers current; and one ducat for each shot from the guard-ship's boat, when in pursuit of the ship.—If the master of any vessel should sail away without acquitting himself, when it is proved who the master or ship was, the fine will be demanded of the person who clears him at the custom-house.



No ship is allowed to pass the Sound without clearing at El-fingoer. If the master of any ship is detected in such an attempt, he is fined according to the size of the ship and the value of the cargo. But, in stormy weather, when a ship cannot come to an anchor in El-fingoer road without much danger, or if the ship be leaky, or going to repair, or to deliver, in such cases, going to Copenhagen is not looked upon as a fraud, but is considered as a case of necessity. At the same time it must be particularly observed, that the documents must be sent down to El-fingoer the soonest possible, in order to clear the ship at the custom-house.

When ships come into El-fingoer-road, or lie wind-bound near the Lap, and hoist their colours, the watermen come on-board, with their boats, to enquire if the master will be carried on shore

to clear, &c. the payment for which is what may be agreed upon. The watermen here are also pilots, and go with ships either through the Grounds or to the Kohl, as required. They have no tax, but are paid by agreement. When the masters of ships going through the Grounds are inclined to take a Dragoe-pilot, the signal for them is a flag at the top-mast-head.

The ship-masters, when they first go on shore, must report their ships at the custom-house, give in such documents as concern their cargoes, and inform the officers what person they mean to clear with; and they will receive, of the person who clears them, or acts as their broker, a portage or premium of 4 per cent. specie on the duties of their cargoes, which his Danish majesty allows them for making a true entry.

*REGULATIONS and INSTRUCTIONS for all Masters of Ships and other Persons sailing and coming in Merchant-Men into any Ports or Harbours belonging to the EMPIRE of RUSSIA, to know how they ought to behave themselves, and what they must observe. As published in Russia, by Authority.*

I. *Merchant ships are to strike their top-sails, passing by the cruizers.*

**A**LL foreign merchant ships, though never so well armed, passing by our cruizers and castle, must strike their top-sails; and if any should refuse to do it, then they are to fire a gun at him, for which shot such masters shall be obliged to pay a ducat; and if he should still offer to resist, then they shall fire at him again; and for the second shot he shall be obliged to pay three times the value of the first.

II. *Foreign ships are not to pass by without giving notice to our cruizers, nor without pilots.*—All foreign ships coming from sea,

must steer up directly to our cruizers, and stop, in order to receive from them these instructions, and must not offer to pass by them upon any pretence whatsoever; and if any should offer to pass by, our cruizers are to fire at them; and for every shot, they will be obliged to pay a ducat. They must also receive on board a pilot from the cruizers; and if any offer to sail without a pilot, they shall be obliged to pay 15 dollars. Likewise if any person should sail without a pilot, and chance to run upon any of her majesty's ships, and the same should receive any damage, he will be obliged to make all the losses good, to the full value according

according to the damage, unless it happen in time of storm, and not through the master's negligence: in such case he shall be free from all penalty.

III. *When the ship comes to an anchor, the master is to deliver a list of all the people he has in the ship, and likewise of the cargo.*—As soon as the master comes to an anchor, or fastens his ship at the appointed place, he is immediately to deliver (if he has one) a list of the names of all his ship's crew, and passengers, as also an account of the cargo, to the officers, who shall come and require the same of him, without any concealment, upon penalty of a forfeit, according to the sea-laws of Russia.

IV. *That all foreign vessels must be fastened to anchors of one fluke, which are laid for that purpose, and not to lie upon their own anchors.*—None of the foreign vessels shall lie upon their own anchors, in the road of Cronstadt, but must be made fast to anchors of one fluke, which are laid for that purpose from St. John's battery for half a verst distance above the man of war's haven.

N. B. To act according to the above article when the anchors are laid.

V. *None are to come into the haven before their powder and other combustible things are unloaded.*—The masters of merchant ships, before they come with their ships into the haven, must unload their powder and other combustible things, at the place appointed for the same, from whence they can take it on board again when ready to depart.

VI. *Vessels with unslaked lime are to keep themselves at a great distance from other ships.*—The vessels which are loaded with unslaked lime must keep themselves at a great distance from other ships, neither must they offer to approach, or come near, or fasten to any of the ships, but must be unloaded in a safe and secure

place, upon penalty of confiscation of the ships and goods, and corporal punishment of the master according to the crime.

VII. *Foreign ships are not to lie between Cronslot and the man of war's haven.*—The foreign ships must not lie between Cronslot and the man of war's haven without very great necessity; and if by a calm or contrary winds they should be obliged to come to an anchor, they must stay no longer than they can, either by warping or sails, bring the ships a quarter of a mile or farther past the man of war's haven, to the eastward or westward of Cronslot, as they shall find most convenient, but never to lie near the man of war's-haven.

VIII. *Foreigners are not to pass near, nor come into, any of the forts, magazines, or man of war's haven.*—Foreigners must not offer to come near or enter our forts, store-houses, or the man of war's haven, upon any pretence whatsoever, even of repairing their ships; but if any one shall have occasion for any thing, then such must apply themselves to the commander in chief, or to the captain of the port, who is to supply all foreigners with what they shall have occasion for, according to their desire, without any hindrance, they paying money for the same.

IX. *Foreigners are not to throw out their ballast from Birch-island to Cronstadt and St. Petersburg.*—Foreigners are forbidden (on this side the Birch-islands to Cronstadt and St. Peterburgh, as also in the river) to throw out their ballast, except in places appointed for the same, which shall be shewn them by the captain of the port. And masters are obliged to order their men to have always in readiness two tubs or baskets on board, wherein they must put all dirt and sweepings from the deck, between decks, and in the hold, in order to be carried ashore, and emptied in the places appointed for the same; and if any shall be found to



act contrary to this, such masters shall be obliged to pay, for every shovel-full thrown out, 100 dollars for the first time, and for the second time the ship will be confiscated; the same is to be understood of all havens, rivers, roads, and all the ports, belonging to the empire of Russia.

X. *When a foreigner finds any thing in the water which has been lost by people of our nation, they are to give notice.*—If any foreign master with his anchors should happen to draw out any anchors or cables that have been lost by the Russians or foreigners, he must immediately acquaint the captain of the port of the same, for which he shall have the third part of the value thereof; and if it proves of no use, it will be restored to him that found it; but if any should conceal the same, and afterwards be discovered, then he will not only be obliged to restore the same, but likewise to pay double what it cost when new.

XI. *To give notice of the quantity of ballast.*—All masters, and other commanders of vessels, upon arrival in the port, are obliged to go to the captain of the port, to get vessels for the unloading of their ballast; and for as many lasts of ballast as shall be unloaded out of the vessels, to pay half a dollar, or sixty-two and a half copeeks Russian money for each last, that is to say, to pay for no more lasts than are really found at unloading of the vessels, and at the appointed places.

XII. *Of the care that is to be taken in unloading the ballast, that none drops into the water.*—Masters of ships must unload their ballast into the vessels appointed for that purpose, with their own men; and must let down a sail-cloth into the vessel wherein they unload the same, that none of it may drop into the water, upon penalty of paying 21 dollars. When unloaded, the said vessels, with the ballast, must be carried to the appointed places by their

own men, where it and the vessels are to be received by the custom-house servants, and by them to be unloaded; and neither the masters of ships, nor their men, are to be obliged to unload the ballast out of these vessels.

XIII. *The ballast, without notice given, is not to be unloaded, nor any to be taken in, but from the places appointed for it.*—It is forbidden for masters of all sorts of vessels to unload ballast, without notice being first given to the captain of the port, upon penalty of ten dollars; but masters must first acquaint the captain of the port, whose duty it is to shew the place where the ballast must be unloaded; and they must likewise be informed, by the said captain, from what place they are to take their ballast when wanted.

XIV. *The ballast must not be unloaded at night.*—Also it is forbidden to unload the ballast at night, under the penalty of one hundred dollars.

XV. *The vessels for unloading the ballast must be demanded from the captain of the port.*—If the merchant-men should have occasion for vessels to unload their ballast, they must demand them from the captain of the port, who has orders to let them be hired to the merchants for half a dollar per last; and if any other particular persons are willing to undertake such a work with their own vessels, they are likewise to receive for their labour half a dollar per last.

XVI. *Masters of merchant vessels are always to have buoys at their anchors.*—All masters of merchant vessels lying at an anchor in the ports and roads where there are none of the one-fluked anchors, must have at their anchors buoys and buoy-tops; and all masters, not regarding this article, must pay twenty dollars.

XVII.

XVII. *Ships drawing above eight feet of water must not come up to St. Petersburg.*—Ships drawing above eight feet of water, English measure, must not come up to St. Petersburg, but lie at anchor in the merchants haven by Cronstadt, to unload so much of their cargo till they be lightened to eight feet water, as above.

XVIII. *In time of loading and unloading their cargo, to beware of fire.*—When masters of ships are loading and unloading their cargo, at that time nobody must smoke tobacco, either above or below the decks, nor in the hold; also no pitch nor tar must be boiled in the cook-room; and in the evening, betwixt eight and nine of the clock, the fire must be extinguished. And if the captain desires in the night-time to have a candle or lamp lighted in his cabin, he is to have it on a flat candlestick filled up with water, that no bad accident may happen therefrom; as for pitch or tar, it must be boiled ashore in a boat, or float.

XIX. *A penalty upon masters if they bring or carry any passengers away, without giving notice thereof in the college, or transport malefactors or prisoners of war.*—All commanders of foreign vessels, coming into this port, having passengers on board, must give notice of the same to the admiralty-college; and in other ports they are to acquaint him who is appointed by the said college. And if any passengers have a desire to be carried by them from Russia, they are not to be received on board, for passage, without

first acquainting the college of admiralty, upon the penalty of fifty dollars; and if any should knowingly offer to carry away any malefactor, he is liable to suffer the same punishment as such malefactors did deserve, and the ship shall be confiscated; as also if any should offer to carry away any prisoner of war, his ship likewise will be confiscated.

XX. *All masters are to give charge to their men, that in their absence they should do nothing contrary to these regulations, for the said masters must be responsible for them.*—Masters are obliged to give strict charge to their men, that every thing appertaining to them may be duly performed in their absence from their ships, because by that they cannot excuse themselves, in case their men should do any thing contrary to these regulations, and must be answerable for all, as being commanders of the ships.

XXI. *Whatever forfeit-money masters shall happen to pay for their people, acquittances shall be given them for the same.*—When foreign sailors do any thing contrary to these regulations, without the knowledge of the masters, and the said masters, by these regulations, being obliged to pay the penalty for the same, acquittances will be given them for money received for an offence committed by their men, and not by the said masters, by which receipt they may be enabled to recover the same with satisfaction in their own country.

*Directions for G O R E E G A T.*

**C**OMING from the southward, make the island of Schowen. Come not to it any nearer than 6 or 7 fathoms, leaving it upon the starboard side about 3 or 4 miles, to avoid the Oster, or Easter. Running in upon 6 or 7 fathoms, E. S. E. or S. E. by E.

if in the night, and you get sight of Goree-light, which is kept upon the steeple, keep it S. E. by E. for if you bring it to E. S. E. you will be too near the Oster.

The



*Directions for Goree Gat and the Texel.*

The marks to run over the S. W. end of the Hinder, or Bar, into Goree-gat, is, Goree-church a ship's length to the southward of the Stone-beacon, or on with a large farm-house, or barn, to the southward of the beacon. Upon the shoal you have 15 or 16 feet at low-water, and afterwards 4, 5, and 6. fathoms to Goree-heads. Between the Hinder and Goree island the channel is narrow, and runs E. by S. and E. S. E. After you

are past the Heads of Goree, your course into Helvoet-roads is S. E. by E. 5 or 6 miles, where you may anchor, either above or below the Heads, in 8 or 9 fathoms. Coming from the northward and bound to Goree gat, keep the church of Zerickzea open to the westward of Goree-island, which will lead you clear of the Hinder.

*Directions for the T E X E L.*

COMING from the southward, and bound to Amsterdam, or any port within the Zuiderzea, endeavour to make Camper-down, which lies upon the coast of Holland, about 7 leagues to the southward of Kyk-down, at the entrance into the Texel. Camper-down is a large Sand-down, to the southward of which, about 4 or 5 miles, are two light-houses, and a large beacon, which appears like a square tower, or steeple, in the day. These lights and beacon stand 4 or 5 miles to the southward of Camper-down, at Egmont upon the sea. You may see the coast of Holland in 12 fathoms water, thwart of Egmont, Camper-down, or Petten; and may run or stand into 6, 5, or  $4\frac{1}{2}$ , fathoms, along the shore; but be careful you do not take Camper-down for Kyk-down, as, between Camper-down and Petten or the downs of Callants Ogh, is low-land, appearing like the entrance into a spacious harbour.

After you have made Camper-down in 9 or 8 fathoms, steer N. E. by E. or N. E. along shore towards Petten, which is a small village that stands 4 leagues to the southward of Kyk-down,

and has a small spire steeple, and, to the southward, land level with the water, with several houses and windmills upon it.

After you are past Petten, run along shore N. E. by N. or N. N. E. about 3 leagues, when you will see two small beacons that stand upon the Sand-downs near the sea-side; when these beacons bear S. E. by E.  $\frac{1}{2}$  E. you are then abreast the first black buoy that lies upon the South end of the Haaks. Then the outermost beacon above Kyk-down will just appear above the North declivity of the said down, bearing N. E.  $\frac{1}{2}$  E.

But if in the night, keeping the light upon Kyk-down N. E. will run you in mid-channel; or keep the lead in  $4\frac{1}{2}$  or 4 fathoms water till you are entered between the buoys and the main.

THE SCHULP-GAT. This is the channel that is most commonly used, and least difficult to a stranger.

After you are abreast the first black buoy, which you must leave on the larboard side, (as well as the other five which lie in this channel,) steer N. E. by E. to the second black buoy two-thirds of a mile, bearing N. W.  $\frac{1}{2}$  N. from the beacon. Continuing

ning this course you come up to the third black buoy; then the small beacons upon the Sand-down bear S. S. E. easterly, and are then on with the first white buoy which lies in the fair-way upon  $4\frac{1}{2}$  fathoms at low-water. Continuing this course, you will fall in with the second white buoy of the fair-way of the Schulp-gat: then your course up to the Darimpe is N. N. E. 3 miles. Here the channel is narrow and shallow, having about 18 feet at low water, and a frightful sea upon a weather-going tide in a gale of wind. Upon the starboard-side, the mill upon the second beacon bearing E. lies a white buoy, about a cable's length distant from the shore; after you are past this buoy, you fall into 7, 8, 10, 12, fathoms water; then steer E. up into the road, and anchor in 10, 8, or 7, fathoms water.

**LANDTS-DEEP.** But if you intend going in through the Landts-deep, where is the most water, run up to the third black buoy upon the Haaks, or till the two small beacons bear South; then you are in the entrance of the Deep, where is 4 fathoms water. In this channel are three black buoys, exclusive of the three black buoys of the Schulp-gat, and the first buoy is at the entrance. They are all to be left to the larboard-side; and four white buoys upon the starboard-side, upon the Middle-plaat.

The directions for this Gat are, After you have brought the beacons on with each other, bearing South, steer North, keeping them on till you come to the third white buoy, about two miles. Then the light-house upon Kyk-down will bear E. by S.  $\frac{1}{2}$  S. Here, in the channel, are 7 or 8 fathoms water. From this to the fourth white buoy is E. N. E.  $1\frac{1}{2}$  mile, 5, 6, and 7, fathoms, and then as before into the road, East.

In running into the road, upon the North side lies a black buoy upon the Laan. The mark for it is, the uppermost beacon

near the Helder on with the middlemost house of three which stand upon the plain, bearing South.

But if it should blow strong to the W. or W. N. W., there is always a heavy and a broken sea runs into the Texel; and, as the ground is exceedingly bad to hold an anchor, it is better to come-to in deep water, before you come upon the bank, in 10 or 11 fathoms water, as here the ground is better, and you have to drag up the bank. But if you come-to on the height of the ground, which is loose, you will drive off again into deep water, and on-shore upon the sand before it is possible to bring up, even with four anchors a-head, the ground being nothing but soft mud.

From the northward bound to the Texel, after you cross the Broad Fourteens, the water will be deeper towards the coast of the Texel and Helder; 14 fathoms is a good birth from, and 13 close to, the Haaks. Bound in to the northward, or Spaniard's-gat, (a channel but seldom used,) bring Hoorn-church bearing S. E. on with the beacon at or upon the Texel island upon each other, then steer so till you fall in with the first black buoy; then the two great beacons upon the Helder will be on with each other, in  $3\frac{1}{2}$  fathoms water. Then steer South to the second buoy, or till the smallest of the large beacons is mid-way between the Great-beacon and church at Kirk Buyrt: then S. S. E.  $2\frac{1}{2}$  miles, leaving the other two black buoys on the starboard-side, and two white buoys on the larboard-side; you will then be in the entrance of the Landts-deep and may proceed as before.

N. B. In this channel is about 15 or 16 feet at low-water.

In the Texel, the tide flows half past 8, full and change, and rises from 4 to 6 feet perpendicular.



*Directions for the different Entrances into the FLIE-GAT, viz. the HOLLEPORT, the RUSSIAN-GAT, and STORTEMELK-GAT.*

#### DIRECTIONS FOR THE HOLLEPORT.

**T**HE outermost black buoy lies a little distance from the West end of the sand, upon the North side of the channel. The long-mark is, Brandaris (which is a high tower, upon the Schelling) between the two beacons, but nearest to the easternmost, or small one, and the thwart-mark is, the mill upon the Flie mid-way between the two beacons.

N. B. All the black buoys at the entrance of the Flie must be left on the larboard, and the white buoys on the starboard, side.

The second black buoy and first white buoy lie with the mill and lower beacon in one. Just below the black buoy, and a little into the channel, lies a small knoll, called the Bol, which has a beacon upon it: this must be left to the northward. The course from the first to the second black buoy is East, nearly one mile.

The third black and second white buoys lie with the beacons in one, upon the Flie.

The fourth black and third white buoys have the upper beacon mid-way between the mill and lower beacon. The course up, from the first black to the fourth black buoy, in a fair-way, is E. N. E.  $1\frac{1}{2}$  mile.

The fifth black and fourth white buoys lie with the light-house and lower beacon in one.

The fifth white buoy is the buoy of Karnemelks-hoek. It lies with the easternmost beacon upon the Schelling on with Brandaris.

The course from the fourth black buoy to Karnemelks-hoek is S. E. nearly one mile.

The course from Karnemelks-hoek into the road is South, altogether four miles.

The bar, or shoaliest place, is between the second black and first white buoy, where you will have three fathoms water, but be careful to give the second black buoy a good birth, if the beacon upon the Bol should be gone.

Soon after you have past these two buoys, you will have  $3\frac{1}{2}$  and then 4 fathoms water, till you come between the fourth black and third white buoys, when you will fall into 6 and 7 fathoms water, and then 9 and 10 fathoms abreast of Karnemelks-hoek: which water you will carry nearly into the road, where you anchor in 6, 5, or 4, fathoms, the light bearing N. W. abreast the red buoy.

#### DIRECTIONS FOR THE RUSSIAN-GAT.

The outermost buoy of this Gat lies in 8 fathoms water: the thwart-mark is, Brandaris a handspike's length to the southward of the northernmost beacon upon the Schelling, and the long-mark is, the upper beacon upon the Flie between the mill and lower beacon.

This buoy and the other must be left to the eastward; they lie upon the northward.

Upon the West side are two beacons, which lie upon the North grounds of the Holleport. The outermost has, for a thwart-mark, Brandaris between the two beacons mid-way; and the long-mark is, the upper beacon upon the Flie just open to the eastward of the lower beacon. This beacon lies in 20 feet water. The course from the outermost buoy till you enter the Holleport, between the

the fourth and fifth black buoys, is due S. S. W.  $1\frac{1}{2}$  mile. At the entrance is 17 feet; after which you have 3 and then 4, till you come in 6 and 7 fathoms, in the Holieport.

**DIRECTIONS FOR THE STORTEMELK-GAT.**

Coming from sea, keep the small beacon (that stands near the shore, and about two miles and an half to the eastward of the lower beacon upon the Flie) between the Lighthouse-down and the White-down, which lies to the westward of it, till you come close under the land, where you will find the first swinging beacon, which must be left to the northward. The small beacon bears S. S. W. from this swinging beacon, being then on with the West end of the White-down. After you are over the bar, you must steer along shore, leaving the two swinging beacons and four black buoys on the larboard, and the two white buoys on the starboard-side. The course up, from the entrance of this Gat to the first white buoy, is E. N. E. 4 miles, and then E. by S. half a mile, between the second white and fourth black buoy, into the Flie stream; from which the course into the road is South.

Upon the shoal part of the entrance, which lies just to the westward of the first swinging-beacon, is 15 feet water; then 3, and, abreast the second beacon, 5 fathoms; thwart the first black buoy 6 fathoms; which depth you carry up till you come between the fourth black and second white buoys, where is only 18 feet, but soon after 9 or 10 fathoms.

Between the two white buoys lies the entrance into the **MON-NEKE SLOTE**; to go into which, you must, as soon as you are past the first white buoy, run close along-side the East end of the Flie-island, between it and the Riggle-sand, upon the North end

of which lies the second white buoy. After you are past the end of the island, haul close round the point W.S.W. and S.W. by W. till you come before the town.

Almost abreast of this channel, but rather above it, upon the East wall, lie three black buoys, just to the southward of the Schelling-channel. The northernmost is called the Riggles buoy, the middlemost, the Kapers buoy, and the southernmost, Caap and Mall buoy: this lies with the beacon and mill upon the Flie in one.

N. B. Be very careful to avoid the Yzer (or Iron) Gat, which runs in between the Holieport and Stortemelk-Gat, as there is not any passage through. In the entrance of this Gat is placed a swinging beacon with a cross upon it.

*Directions what Course to steer, and what Signs and Marks to observe, in sailing into the EAST-EMS.*

**W**HEN under sail, proceed so as to bring the great steeple on Borkum, by the compass, S. by E.  $\frac{1}{2}$  E. on the observation of which mark, you will find the outermost buoy to lie on the shelf called the Rif of Borkum, in 6 fathoms water; or the ship sails so as to make the wooden beacon on Borkum appear as if placed in a distance of the length of a handspike northward from the said steeple. When you observe these marks, you will meet with the Out-buoy. Thence the course is S. E. as far as the fourth buoy, and afterwards S. E. by S. as far as Brouwer's buoy, which lies close to Hooge Hoorn, (a shelf so called,) and then S. E. by S. and S. S. E. to the King's buoy, which lies close to a shelf, called Ranzell; which course is to be continued,



*Description of the Chart of Heyligland.*

continued, till the two beacons on Bands-Baig, (a shelf,) on the left, appear to meet, as if united into one. When you observe these marks, in that latitude, you will easily discover the corner buoy of the Ranzell, (a large shelf,) which lies in 3 fathoms water, and is called the Cape-buoy; thence sail S. S. W. three German miles towards the shore of Groningen and Delfziel.

In this distance of three miles, there are, along the Ranzell, on the starboard-side, some buoys outward of that shelf, which are removed on the approach of the winter season, to prevent their being destroyed or driven away by the ice. In this season, therefore, when no buoys are out, navigators should avail themselves of the land-mark, which offers itself there, viz. If the steeple on Holwier appears as bordering upon, or being entirely contiguous to, a thicket, that is there, you get clear of the sand Ranzell, where it may also be observed; when the ebb-tide, which runs with the greatest force and violence towards the West-Ems, is making a stop there, in like manner as the flood-tide is obstructed by the shelf of Pilsum, called Watt, so that this tide is forced to take from thence two different directions, the one to the W. N. W. and the other to the E. S. E.

The course from Delfziel up as far as Knock (being the corner of East-Friesland) is E. S. E. and continues the same till the ship arrives opposite the city of Embden, where there is a small island, called Neeffer-Land, whence any ship may sail, at high-water, up to the city, where ships and vessels, of the draught of 12 feet water, may conveniently lie along, near the houses and buildings of the city.

*Description of the CHART of HEYLIGLAND.  
Which may be had of D. STEEL, Bookseller,  
Tower-Hill.*

A.

THE island of Heyligland is a flat island, and may be seen at 5 or 6 leagues distance in clear weather; on which none but pilots and fishermen live.

It lies in the latitude of  $54^{\circ} 10' N.$  and on it is kept a good light-house the whole year. On the S. E. side, not far from the island, lies a rock, on which is a buoy: the marks for this rock are, a small wooden beacon, standing on the South end of the island, and the light-house near it, also the two wooden beacons on the Sand-downs, which lie about one mile to the eastward of the island, in a line. The buoy on this rock is sometimes driven away by stormy weather; therefore the marks are the surest. There is also a broken point on the South end of the island, called the Monk. When you bring this Monk clear of the island, then you may steer your course for the Elbe, as in the directions.

B. The Sand-downs, consisting of some small hills. Between these downs and the island you may ride, in case of distress, if the ship cannot go to the Elbe on account of the ice. On the East side of these downs there is good riding with W. and S. W. winds, in 7, 8, or 10, fathoms.

C. Wrangeroog, is a low island, with the tower of a church on it. In winter, there is a light-house kept there. Round this island is a sand-shore: at the West end runs in the Harrel. You may sail by this island in 10 or 11 fathoms.

D. A wooden

D. A wooden beacon on the point of Smits-Steert; along the West side is a fine sand-strand, where you may run close along into the Weezer. Opposite lies the Tegeelers-Plat, a sand bank on the Black-ground, where commonly the Bremen pilots come on-board you.

E. The Red-buoy; outside which, most commonly, if stormy weather and the ice does not prevent it, lies the Hamburger Admiralty pilot-galliot at anchor, out of which all ships that come from sea must take pilots. In case they do not steer the right course, they fire a gun and shew a flag. This galliot is chiefly known by a broad vane at the mast-head. In clear weather you may see her between the Heyligland and the Elbe.

F. Voogelzand is a long sand-bank, as it appears in the Chart, which, towards the West point, lies deeper under water, and rises by fathoms. Near the Red-buoy, hard sandy ground, likewise to the East of said buoy; but four miles to the West is blueish soft ground, and towards the middle and North channel abreast it is dry in several places. You must take great care here in sailing in, for there run three channels by the said sands into the Elbe; two of which are buoyed, as marked in the chart. The North channel is the best. On the North side of the channel are all white buoys, and on the South side all black, the whole river up, which may be seen one from another, and the same in the South channel. In the winter, there is an ice buoy laid by each of the other buoys, in bad weather. When the pilot-galliot can lie no longer by the Red-buoy, then it lies just within the new North channel, or to the East of Voogelzand.

G. Schaarhorn is a sand, to which you cannot come nearer than 7 or 8 fathoms, and on which stands a wooden beacon; which beacon and the square tower on Nieuwe Werk bring in a line,

then the Red-buoy lies in 11 fathoms water, abreast of the said sand, which is the first buoy you meet coming in. Along-side this sand lie the Red-kettle and Schaar buoys.

H. A light-house on Nieuwe Werk, which is kept the whole year, as on the Heyligland. In case you should steer for the Elbe by night, bring the said light to bear S. S. E. from you, where you may bring your ship up in 10 or 11 fathoms water.

I. The great beacon on Nieuwe Werk not far from the light-house. Bring the said beacon and the light-house in one line; then you are abreast of the first white buoy in the Elbe.

K. The tower of Nieuwe Werk. This tower, with the small beacon on Schaarhorn, the red buoy and the light-house of the Heyligland in one line, bear about S. E. or N. W. from each other.

L. Is called the Klapmutzen-beacon of Nieuwe Werk, to the eastward of the same. This beacon serves only for laying the buoys in the river, whenever they should have occasion to be removed, and for pilots who go in and out daily.

M. Kugel-beacon, is a small beacon on the South shore, about four miles from Cuxhaven. When you are within the channels, you may steer for this beacon or a little on your starboard. By this beacon you sail close along up the Elbe.

N. Cuxhaven, where there is, in case of need, a harbour for ships to winter in, when the ice will not permit them to go higher; and ships coming from the Straits must be first cleared here, and such as have lost their anchors or cables, or are in any distress, by firing a gun or hoisting their colours in a wait, will be immediately supplied, by orders of the Admiralty, with what they stand in need of. Out of this port sails the pilot-galliot, when the ice does not prevent them, and whenever they cannot go out,



*Directions for sailing towards Heyligland, coming from the Westward.*

on account of it, a small fishing-boat is kept to meet the ships coming into the Elbe. The best harbour to save ships from the ice is Glückstadt.

## DIRECTIONS FOR SAILING TOWARDS HEYLIGLAND, COMING FROM THE WESTWARD.

AFTER you pass the Texel, with a large wind, keep in 15 or 16 fathoms water until you pass Borkomer Rif, which stretches out N.W. and is known by small red stones, which will appear on your lead. With an E. by N. course, you will sail in between Heyligland and the Elbe; but, should you pass the Texel, with northerly winds or in rainy weather, being bound for the Elbe, you are naturally fearful of the South shore; in such case, keep farther off. Should you guess yourself to be within 7 or 8 leagues of the island, in 17 or 18 fathoms water, and have soft muddy ground, such as is found in the fair-way of the island, you must not steer for the island, because you may be mistaken in your reckoning; for, 6 or 7 leagues to the northward of the island, there are the same soundings as along the South shore; and also soft ground is in a parallel with the island. Therefore you must be very sure that you have your soundings from the South shore, or a good observation from the island, before you can bear away. It has happened to many, after passing the Texel, with northerly winds, who judged themselves abreast of Borkomer Rif, in 18 or 19 fathoms water, and steered S. S. E. to gain the South shore, until they had 14 fathoms water, coarse sand and small red stones, like the soundings of the Borkomer Rif, that they then found themselves to be 7 leagues to the northward of the island.

N. B. You must always reckon five leagues more easterly on

your draught than you really are, between the Texel and the island. With southerly winds it is remarked that the variation is more than with other winds.

*Accurate Directions for sailing from the Island of HEYLIGLAND towards the Elbe, with the Courses, Soundings, Setting of the Tides, Marks, in stormy or thick Weather, whenever the Heyligland Pilots cannot come on-board; also to go to the Elbe with southerly Winds, without going to the Island for a Pilot.*

WHEN you are near to the island, and bound for the Elbe, with a fair wind, you must keep at least two miles to the northward of you, and then steer E. by S. or E. S. E. until you open the Monk from the island, or that it bears N. W.  $\frac{1}{2}$  N. from you; then, with the flood, you must steer S. E. by S. by the compass, and with an ebb S. E. by E. by reason of the setting of the tides; but the true course, from the island to the red buoy, is S. E. and be very careful how you account for them, in spring-tides. With the first of the flood, you may steer S. E. by S. and S. S. E. and with an ebb E. S. E. and, when you have sailed about 3 leagues from the island, you will have 15 fathoms; when 6 leagues, you will have 11 or 12 fathoms; you are then on the tail of the Voogelzand, and will have yellow soft ground with small shells; the red buoy bears then S. E. from you; with clear weather, you will see Nieuwe Werk, Shaarton-beacon, and all the marks. If you see the pilot-galliot, you must steer to her, as you come over the

the Voogelzand: with the same course, you will deepen your water to 12 or 13 fathoms, soft ground, and you are then in the Elbe, and in a fair-way. When you come to the galliot, you must bring-to, till they put a pilot on-board you; but, should the galliot be gone, observe how the Shaarhoorn beacon bears from the Tower of Nieuwe Werk, then steer so as to bring them both in a line. When you are in 11 fathoms water, then you find the red buoy. From the red buoy to the first black buoy the course is E. by S. and E. S. E. This is called the Kettle buoy, and lies with the great beacon and westernmost house in one, the light-house bearing S. S. E. and the Schaar beacon S.

Continue this course to the second black (or Schaar) buoy. This buoy lies with the great beacon and steeple in one, and the light-house bearing S. by E. Right thwart this buoy, upon the flat of the Voogel-sand, lies the first white buoy going into the Elbe, the great beacon and steeple being then on with each other.

In going up the Elbe, the black buoys are to be left on the starboard-side, and the white buoys the contrary.

From the Schaar buoy to the Hondsbalg buoy (which is black, as are all the buoys mentioned from this to Cuxhaven) the course is S. S. E. between which lies another, called the Middle-Ton, or buoy; the mark for it is, the westernmost house upon Nieuwe Werk on with the steeple.

Opposite to this lies, with the same marks, the second white buoy, in  $3\frac{1}{2}$  fathoms water.

When you are abreast the Hondsbalg buoy, the small house and light-house are on with each other.

From the Hondsbalg buoy to the Lee buoy the course is S. E. by S. The mark for it is, the middle house and steeple in one.

From the Lee buoy to the Black-flag buoy, and buoy, No. 4, the course is E. S. E.

The Black-flag buoy has a small black flag upon it, and lies with the small house and westernmost house in one.

No. 4 lies with the small house upon the East end of the sea dyke.

From No. 4 to No. 5, the course is S. E. by E. This buoy lies with the small house and beacon on with each other.

From No. 5 to the Bastion buoy, the course is S. E. between which are two other buoys, viz. No. 6 and No. 7. The marks are, for No. 6, the Clapmatch beacon to the eastward of the three large houses upon Nieuwe Werk; and for No. 7, the castle at Cuxhaven on with the Duce mill.

For the Bastion buoy, the large beacon at Cuxhaven a ship's length open of the large house to the westward. Then the course up to the little beacon is S. E. by S. 4 miles. From hence to half a mile above Cuxhaven is the road, but very dangerous with the wind at N. W.

N. B. The black buoys are nearly one mile distance from each other, and opposite to each lies a white one.

Also observe, that there is not at present any northern channel, it being entirely grown up, and the buoys taken away.

**DIRECTIONS FOR SAILING FROM THE ISLAND OF HEYLIGLAND TO THE ELBE, WITH A SOUTHERLY WIND.**

YOU need not go to the island for its mark, but give it a birth four miles to the northward of you; then, with a flood, you must steer S. E. by S. and S. S. E. with a scant wind; and with an ebb S. E.  $\frac{1}{2}$  E. You must keep your lead carefully going, and make allowances when your ship goes fast or slow, because the first of

the



*Directions for sailing from Heyligland to the Elbe.*

the flood sets N. E. over the Schaarhorn, and near high-water it sets S. W. Always be careful to regulate your tides, winds, and lead. The South shore is steep from 10, to 9, and 7, fathoms, and then dry.

When you are over the Voogelzand, you must keep in 12 or 13 fathoms water, soft ground, which is the fair-way, as above. Come no nearer the South shore than 10 fathoms; you will have hard ground; as also on the Voogelzand, opposite the red buoy, in 9 fathoms, and all along the Voogelzand in 8, 7, 6, and 5, fathoms.

From the red buoy to the New North-channel, the course is E. and E. by S. Above the first and second white buoys, on your larboard-side, begins the New North-channel, in which the courses are mostly easterly, as above. When you are through the channel, your course is then S. by E. and S. S. E. to the Still-sand.

When you judge yourself to be in the middle between Wrangroog and the island, and bound to the Elbe, with a flood, you must steer E. by S. and with an ebb East; but if you come along the South shore in 12 or 13 fathoms, and are to the eastward of the Weezer, then steer with a flood E. N. E. and with an ebb East. Opposite the Weezer you will have 17 or 18 fathoms water, in some places. When you judge yourself to have sailed 5 leagues, and have 15 fathoms, then the red buoy bears East from you. Your course, with a flood, is E. by N. and with an ebb E. by S. towards the Elbe; keep your lead going in 11 or 12 fathoms, which will bring you into the Elbe. You will find, opposite the westward and eastward Tillen, 16 and 17 fathoms water, in holes.

Should it be dark, thick, or rainy, weather, keep along the

South shore, in 11 or 12 fathoms water, till you judge yourself to be within the red buoy, then steer up to the South shore till you have got 9 or 10 fathoms; bear off again till you have 12 or 13 fathoms in the fair-way, then you must anchor till the weather clears up. It is not prudent to go far into the Elbe without seeing the buoys or marks.

#### DIRECTIONS FOR SAILING WITH NORTHERLY WINDS FROM THE ISLAND TO THE ELBE.

BRING the Monk to bear N. W.  $\frac{1}{2}$  N. sail then with a flood S. E. and S. E. by S. and with an ebb E. S. E. or S. E. by E. When you are about 5 leagues within the island, you will have 10 or 11 fathoms on the outer end of the Voogelzand. Though you may not see the red buoy, you must still keep your course; but keep no farther to the eastward than to have the tower and the great beacon on Nieuwe Werk in a line, they will then bear S. S. E. from you; on which mark lies the first white buoy.

From the said buoy to the second white buoy the course is S. E. by E. which is the beginning of the channel. From the said second buoy to the third white buoy the course is E. by S. and all the other courses as laid down in the chart. Keep all the white buoys on your larboard from you.

You will find sometimes nine and sometimes ten black buoys in the channel; and the white buoys lie opposite the black ones.

And all the before-mentioned courses are taken by the compass, as on the chart is no variation; and the depths are taken at low-water.

DIREC-

DIRECTIONS FOR SAILING TOWARDS THE WEEZER; ALSO THE COURSES, SOUNDINGS, SETTING OF THE TIDES, AND MARKS HOW YOU MAY COME THERE, WITH A FAIR WIND.

COMING from the westward, bound for the Weezer, supposing yourself to be abreast of the island Baltrum, keep in 11 or 12 fathoms along-shore until you see Wrangeroog tower: keep in that depth of water, and it will bring you to the first black buoy, which you must leave on your starboard-side. You must do so with all the other black buoys, as in the river of Hamburg; but be very sure to take your soundings from the South shore; because W. N. W. from the first buoy in the entrance of the Weezer is a flat, on which is no more than 9, 10, and 11, fathoms. The West end of this flat bears N. N. W. from the tower of Wrangeroog. When you are in the Weezer, or before it, you will have soft ground, which is a sure mark that you are there. Keep in 11 fathoms water, and it will bring you in sight of the Key buoy; its mark is, to bring the tower Wrangeroog to bear S. W.  $\frac{1}{2}$  S. from you. It lies in  $10\frac{1}{2}$  fathoms water, with the first black buoy No. 47 with a gilt key on it.

The 2d black buoy, marked with an A. has a small spar with a gilt pear on it.

The 3d black buoy is marked with a B.

The 4th black buoy is marked with a C. and has a gilt cross on it, at which the tower of Wrangeroog will bear from you W. S. W. The course from the 1st to the 4th black buoy is E. by S.  $\frac{1}{4}$  S. The first of the flood runs strongly to the southward into the Jaa, and the ebb contrary to the northward.

The 5th black buoy is marked with a D.

The 6th black buoy is marked with an E.

The 7th black buoy is called the Melln, and marked with an F. it has a small spar with a flag on it, at which Wrangeroog will bear from you W. by N. The course from the 4th buoy to the 7th is S. E. When you pass this 7th buoy, keep the beacon on Smits Steert S. by E. from you; then you are in the fair-way,

The 8th black buoy is marked with a G.

The 9th black buoy is marked with an H.

The 10th black buoy is marked with an I.

The 11th black buoy is marked with a K. and lies a little below the beacon in Smits-Steert. From the 7th buoy to the 8th, the course is S. by E. From the 8th to the beacon on Smits-Steert the course is S. S. E.

The 12th black buoy is marked with an L. and lies before Bollenzieq; then the beacon on Smits-Steert will bear N. W. from you. From this buoy to the 13th, which is marked with an M. called the Aallers buoy, and the 14th, marked with an N. which lies before the high-way, the course is S.  $\frac{1}{2}$  E.

The 15th black buoy is marked with an O. called the Bogt buoy.

The 16th black buoy is marked with a P. and lies before the point of the Solthorn. On this is a spar with a flag, then the church of Langwardden will bear S. W. by W. from you. From the buoy which lies before the high-way, marked N. to the Solthorn buoy, marked P. the course is S. E. by S.

The 17th black buoy is marked with a Q.

The 18th black buoy is marked with an R.

The 19th black buoy is marked with an S.

The 20th black buoy is marked with a T. Having passed this buoy you sail then close along-shore to Blexum.

From



*Directions for sailing towards the Weezer.*

From the Solthorn buoy, marked P. to the 17th buoy, marked Q. the course is S. by E. From that to the Green shore the course is S.  $\frac{3}{4}$  W. The course along-shore is S. E. At Blexum you will get a river pilot to carry you to Bremen, which is 11 leagues from you.

The white buoys are all numbered.

No. 1. Is the outermost in the Weezer, and bears N. E.  $\frac{1}{2}$  E. from Wrangeroog.

No. 2. The second, lies abreast of the 6th black buoy.

No. 3. and 4. Lie before the Teeglers Plaat; on each is a spar with a flag.

No. 5. Lies abreast of the 11th black buoy; on this is also a flag.

No. 6. 7. and 8. Lie before the Middle Plaat; on each of these is a spar with a flag.

No. 9, 10, and 11. Lie in the channel near the shore.

When bound from the island to the Weezer, with northerly

winds, you must steer to the southward until you get sight of Wrangeroog, then bring the light-house a handspike's length to the eastward of the tower of Wrangeroog, or bring Wrangeroog to bear S. W. from you, but no more to the westward; then you will run close by the outermost white buoy in the Weezer. From this buoy to the 4th black buoy, called the Cross-buoy, the course is S. E. then you must steer as before-mentioned.

N. B. On all the black buoys, the letters are marked with white paint; and on all the white buoys with black numbers, and very plain. You may run close to any of them to see their marks or numbers, as all ships do that come to this port. From the Key buoy to the beacon in Smits Steert is about 6 leagues; from Smits Steert to Blexum about 5 leagues. According to the Admiralty orders, the pilots must go as far out to sea as possible.

Such ships as should come here in winter, and find the rivers frozen, must go into Gueest, otherwise to Buurheaven to secure their ships from the ice.

From

## From LONDON along the NORTH COAST.

			Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From	LONDON Bridge to the Buoy of the Nore	_____	Various	48	21 30
	Buoy of the Nore to the Blacktail Beacon	_____	E $\frac{1}{2}$ N	9	
	Blacktail Beacon to the Buoy of the Mouse	_____	E $\frac{1}{2}$ S	1 $\frac{1}{2}$	
	Buoy of the Mouse to the Shoe Beacon	_____	E N E $\frac{1}{4}$ N	3	
	Shoe Beacon to the Buoy of the Middle	_____	N E	6	
	Buoy of the Middle to the Whitaker Beacon	_____	N $\frac{1}{2}$ W	0 $\frac{3}{4}$	
	Buoy of the Middle to the Buoy of the Spitway	_____	N E $\frac{1}{2}$ E	3	
	Buoy of the Middle to the Gunfleet Beacon	_____	E $\frac{1}{2}$ N $\frac{1}{2}$ N	9 $\frac{1}{4}$	
	Buoy of the Middle to the Gunfleet Buoy	_____	E $\frac{1}{2}$ N & E N E	16 $\frac{1}{4}$	21 0
	Buoy of the Gunfleet to the West Rocks	_____	N E	2	
	West Rocks to the Buoy of the Ruff	_____	N $\frac{1}{2}$ E	4	
	Buoy of the Ruff to Orfordness	_____	N E $\frac{1}{2}$ N to E N E	12 $\frac{1}{4}$	
	Orfordness to Aldborough	_____	N N E $\frac{1}{2}$ E	4	
	Orfordness to Southwold	_____	N E $\frac{1}{2}$ N & N N E	18 $\frac{1}{4}$	
	Orfordness to Eastness	_____	N E $\frac{1}{2}$ N	23	
	Orfordness to Lowestoff, or Buoy of the Stanford	_____	N E $\frac{1}{2}$ N to N N E	29	21 0
	Lowestoff to Yarmouth	_____	N $\frac{1}{2}$ E $\frac{1}{4}$ E	8	21 30
	Yarmouth Jetty to the Buoy of Scroby	_____	N $\frac{1}{2}$ E	3 $\frac{1}{2}$	
	Buoy of Scroby to the NE Buoy of the Cockle	_____	N N E	1 $\frac{1}{2}$	
	NE Buoy of the Cockle to Winterton Thwart Lights	_____	N o N N W	5 $\frac{1}{2}$	
	Winterton Ness, or Thwart Lights, to Hasborough	_____	N N W $\frac{1}{4}$ W	10	
	Hasborough to Cromer or Foulness	_____	N W $\frac{1}{2}$ N	8	
	Foulness to Blakeney	_____	N W $\frac{1}{2}$ W	12	
	Foulness to the Dudgeon or Floating Light	_____	N $\frac{1}{4}$ W	22	21 30
	Foulness to the Spurn	_____	N W $\frac{1}{2}$ N	52	



## From LONDON along the NORTH COAST.

						Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Foulness to Flamborough-head	—	—	—	—	—	NNW	77	
Dudgeon Light to the Spurn	—	—	—	—	—	NW $\frac{1}{2}$ W	37	
Dudgeon Light to Flamborough-head	—	—	—	—	—	NNW $\frac{1}{2}$ W	56	
Spurn to Flamborough-head	—	—	—	—	—	N $\frac{1}{4}$ E	27	
Flamborough-head to Whitby	—	—	—	—	—	NW $\frac{1}{2}$ N	30	
Flamborough-head to Tinmouth Castle	—	—	—	—	—	NNW $\frac{3}{4}$ W	74	
Scarborough to Whitby	—	—	—	—	—	NNW	14	
Whitby to Hartlepool	—	—	—	—	—	NW	22	
Hartlepool to Sunderland	—	—	—	—	—	N	14	
Sunderland to Tinmouth Castle	—	—	—	—	—	N	9	21 30
Tinmouth Castle to Blyth	—	—	—	—	—	N $\frac{1}{2}$ W	9	20 30
Tinmouth Castle to Cocket Island	—	—	—	—	—	N	20	
Cocket Island to the Staples	—	—	—	—	—	N $\frac{1}{2}$ E	20	
Staples to Holy Island	—	—	—	—	—	NW	6	
Holy Island to Berwick	—	—	—	—	—	NW	10	

## From the STAPLES, along the Coast of SCOTLAND, to the ISLE of CHANT in the LEWISES.

From <b>S</b> TAPLES to St. Abb's-head	—	—	—	—	—	NW $\frac{1}{2}$ N	32	20 0
Staples to Buchanefs	—	—	—	—	—	N $\frac{1}{2}$ E $\frac{1}{2}$ E	96	
Buchanefs to Duncansby-head	—	—	—	—	—	NNW $\frac{1}{2}$ W	78	19 0
Buchanefs to North Ronaldsha	—	—	—	—	—	N	115	
Buchanefs to Fair Isle	—	—	—	—	—	N $\frac{1}{2}$ E $\frac{1}{4}$ E	119	
Buchanefs to Lerwick in Shetland	—	—	—	—	—	NNE	154	
North Ronaldsha to Fair Isle	—	—	—	—	—	E $\frac{1}{2}$ N	42	
Fair Isle to the South-end of Shetland	—	—	—	—	—	NE $\frac{1}{2}$ N	22	
Fair Isle to Foul Isle	—	—	—	—	—	N $\frac{1}{2}$ W	44	
South-end of Shetland to Foul Isle	—	—	—	—	—	NW $\frac{1}{2}$ W	29	
Duncansby-head to Petland Skerries	—	—	—	—	—	E $\frac{1}{2}$ N	3 $\frac{1}{2}$	

From the STAPLES, along the Coast of SCOTLAND, to the ISLE of CHANT in  
the LEWISES.

					Course by the Compass.	Distance in Miles.	Variation N. Westerly.
From Duncansby-head to the Island of Stroma	—	—	—	—	NNW $\frac{1}{2}$ W	3 $\frac{1}{4}$	Deg. Min. 20 0
Duncansby-head to the South Ronaldsha	—	—	—	—	ENE	5	
Petland Skerries to the South Ronaldsha	—	—	—	—	N $\frac{1}{2}$ E	2 $\frac{1}{2}$	
Petland Skerries to the Island Stroma	—	—	—	—	NW	5	
Island Stroma to Dinnet-head	—	—	—	—	W $\delta$ N $\frac{3}{4}$ N	7	
Dinnet head to Brims Point	—	—	—	—	NE $\delta$ E	5 $\frac{1}{4}$	
Dinnet-head to Hoy-head	—	—	—	—	N $\delta$ E	12	
Course through Petland Firth	—	—	—	—	NNW to NW	16	
Dinnet-head to Cape Wrath	—	—	—	—	W $\delta$ N $\frac{3}{4}$ N	47	
Dinnet-head to Stack and Skerry Islands	—	—	—	—	NNW $\frac{1}{2}$ W	32	
Hoy-head to Stack and Skerry Islands	—	—	—	—	NW $\delta$ W	23	
Hoy-head to Cape Wrath	—	—	—	—	W $\frac{1}{4}$ S	50	
Cape Wrath to Stack and Skerry	—	—	—	—	NE $\delta$ E	28	
Cape Wrath to the Butt of the Lewises	—	—	—	—	W $\frac{3}{4}$ N	41	
Cape Wrath to the Islands Barra and Rona	—	—	—	—	NNW	42	
Cape Wrath to Bible-head	—	—	—	—	W $\delta$ S	44	
Cape Wrath to the Isle of Chant	—	—	—	—	WSW	57	
Stack and Skerry Islands to Barra and Rona Islands	—	—	—	—	W $\delta$ N $\frac{1}{2}$ N	40	
Butt of the Lewises to Barra and Rona	—	—	—	—	NNE	39	
Butt of the Lewises to Gallon-head	—	—	—	—	W $\delta$ S $\frac{1}{2}$ S	23	
Butt of the Lewises to the Flanin Islands	—	—	—	—	W $\frac{1}{4}$ N	33	21 0
Gallon-head to the Flanin Islands	—	—	—	—	NW $\delta$ W	12	
Flanin Islands to St. Kilda	—	—	—	—	SW $\delta$ S	36	
St. Kilda to Black Rock, N W part of Ireland	—	—	—	—	SW $\delta$ S	237	
Butt of the Lewises to Folsta-head	—	—	—	—	S $\frac{1}{2}$ E	9	
Folsta-head to Bible-head	—	—	—	—	S $\delta$ W $\frac{1}{2}$ W	8	
Bible-head to Stornawa	—	—	—	—	WSW to W $\delta$ N	7	



From the STAPLES, along the Coast of SCOTLAND, to the ISLE of CHANT, in  
the LEWISES.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly, Deg. Min.
From Bible-head to the Isle of Chant	SW $\frac{1}{2}$ S	17	
Island of Chant to the Isle of Glaß	W $\frac{1}{2}$ S	8	
Island of Chant to the Rock Skerinoe	WSW $\frac{1}{2}$ S	6 $\frac{1}{2}$	

From the Isle of GLASS in the LEWISES, through the ISLANDS and IRISH CHANNEL to the ORMSHEADS in  
LIVERPOOL-BAY.

From ISLE of Glaß to the Rock of Skerinoe	SE	2	22 °
Isle of Glaß to Donbagan-head or SW end of Sky Island	SW $\frac{1}{2}$ S	26	
Isle of Glaß to Barra-head	SW $\frac{1}{2}$ S to WSW	70	
Dunbagan-head to Barra-head	SW to WSW	48	
Dunbagan-head to the Sound of Cana	S $\frac{1}{2}$ E	29	
Through the Sound of Cana	SSW to SW	2	
From Sound of Cana to the Point of Aird, or Sound of Mull	S $\frac{1}{2}$ E	24	
Point of Aird to Tobby Murry	SSE	7	
Tobby Murry to the Green Islands	S $\frac{1}{2}$ W	9	
Green Islands to Mackulifter's Bay	SSE to S	9	
Mackulifter's Bay to Castleduit	SE to S	5	
Castleduit to Lochdon	SW	1 $\frac{1}{2}$	
Lochdon to the Sound of Ila	SW $\frac{1}{2}$ W to SSW	40	
Through the Sound of Ila	SSW to S	12	
From Sound of Ila to the SW end or Mull of Cantire	S $\frac{1}{2}$ W	27	
Barra-head to the Rocks of Turry	S	33	
Barra-head to Rathlin Island	S $\frac{3}{4}$ E	94	
Rocks of Turry to the South-end of Ila	S $\frac{1}{2}$ E $\frac{1}{2}$ E	47	
South-end of Ila to Rathlin Island	SW $\frac{1}{2}$ S	14	21 °
South-end of Ila to Fair-foreland	SSW $\frac{1}{2}$ W	17	
South-end of Ila to the Mull of Cantire	SSE	25	

From the ISLE of GLASS in the LEWISES, through the ISLANDS and IRISH CHANNEL, to the ORMSHEADS in LIVERPOOL-BAY.

From the ISLE of GLASS in the LEWISES, through the ISLANDS and IRISH CHANNEL, to the ORMSHEADS in LIVERPOOL -BAY.						Course by the Compass.	Distance in Miles.	Variation N. Westerly.
								Deg. Min.
From Mull of Cantire to the Maids or Maiden Rocks	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	14	21 0
Mull of Cantire to Copeland Light	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	31	
Mull of Cantire to the Mull of Galway	—	—	—	—	—	S $\frac{1}{2}$ E $\frac{1}{2}$ E	42	
Copeland Light to the Maiden Rocks	—	—	—	—	—	N $\frac{1}{2}$ E $\frac{1}{2}$ E	14	
Copeland Light to the North and South Rocks	—	—	—	—	—	S $\frac{1}{2}$ E	19	
Copeland Light to the Mull of Galway	—	—	—	—	—	E $\frac{1}{2}$ S	22	
Mull of Galway to the Calf of Man	—	—	—	—	—	S $\frac{1}{2}$ W	41	20 0
Mull of Galway to the Point of Ayre	—	—	—	—	—	SSE $\frac{1}{2}$ E	40	
Mull of Galway to Boultness or Carlisle River	—	—	—	—	—	E $\frac{1}{2}$ S $\frac{1}{2}$ S	58	
Mull of Galway to Whitehaven	—	—	—	—	—	SE $\frac{1}{4}$ E	60	
Point of Ayre to Boultness	—	—	—	—	—	E $\frac{1}{2}$ N $\frac{1}{2}$ N	43	
Point of Ayre to Whitehaven	—	—	—	—	—	E	34	
Point of Ayre to Ramsey Road	—	—	—	—	—	S $\frac{1}{2}$ W	5	
Point of Ayre to Mauhall-head	—	—	—	—	—	S $\frac{1}{2}$ W	6	
Point of Ayre to the Calf of Man	—	—	—	—	—	WSW to SW	29	
Mauhall-head to the Barriland	—	—	—	—	—	S	57	
Mauhall-head to the NW Buoy of the Horse Channel	—	—	—	—	—	S $\frac{1}{2}$ E	59	
Mauhall-head to the Ormtheads	—	—	—	—	—	S $\frac{1}{2}$ W	49	

From the ISLE of MAN, through St. GEORGE'S CHANNEL, up BRISTOL CHANNEL, and to the ISLES of SCILLY.

From MAUHAU-HEAD to the Skerry Light	—	—	—	—	—	SW $\frac{1}{2}$ S	51	21	0
Mauhall-head to Holy-head	—	—	—	—	—	SW $\frac{1}{2}$ S	59		
Calf of Man to Holy-head	—	—	—	—	—	S $\frac{1}{2}$ W	48		
Calf of Man to the Skerry Light	—	—	—	—	—	S $\frac{1}{2}$ W	40		
Calf of Man to the Ormhead	—	—	—	—	—	SSE	43		
Calf of Man to the NW Buoy of the Horse Channel	—	—	—	—	—	SE $\frac{1}{2}$ S	62		
Calf of Man to Dublin	—	—	—	—	—	WSW	61		



From the ISLE of MAN, through ST. GEORGE'S CHANNEL, up BRISTOL CHANNEL, and to the ISLES of SCILLY.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Calf of Man to Drogheda	W $\frac{1}{2}$ S	58	21 0
Calf of Man to Newry	W $\delta$ N $\frac{1}{2}$ N	47	
Calf of Man to the North and South Rocks	N $\delta$ W $\frac{1}{2}$ W	39	
Calf of Man through the Channel between the Smalls and Irish Coast	SW $\frac{1}{2}$ S	120	
Holy-head to the Skerry Light	NE	9	
Skerry Light to Point Linas	E	10	
Point Linas to the Great Orm'shead	ESE	15	
Great Orm'shead to the NW Buoy of the Horse Channel	E	23	
Holy-head to Dublin Bar	W $\delta$ N $\frac{1}{4}$ N	53	
Holy-head to Barfey Island	SSW $\frac{1}{2}$ W	35	
Holy-head to St. David's-head	SSW $\frac{1}{2}$ W	90	
Holy-head to the Smalls	SW	100	20 0
St. David's-head to Dublin Bar	N $\frac{1}{2}$ W	94	
St. David's-head through the Islands to Milford-haven	S $\delta$ E	19	
St. Anne's Point, or Milford-haven, to Cork	WNW	126	
St. Anne's Point to the Old Head of Kintale	W $\delta$ N $\frac{1}{2}$ N	145	
St. Anne's Point to Cape Cornwall	SW $\frac{1}{4}$ S	88	
St. Anne's Point to Lundy Island	SSE	36	
Lundy Island to Tenby	N $\delta$ E $\frac{1}{2}$ E	26	19 30
Lundy Island to the Flatholm	E $\frac{1}{4}$ S	65	
Lundy Island to Mine-head	ESE	43	
Lundy Island to Combe	SE $\delta$ E	20	
Lundy Island to Hartland Point	S $\delta$ W	12	
Lundy Island to Cape Cornwall	WSW	76	
Flatholm to King Road	ENE to SE	15	
Flatholm to Mine-head	W $\delta$ S	25	
Cape Cornwall through St. George's Channel to Dublin	N $\delta$ E $\frac{1}{4}$ E	170	

From the ISLE of MAN, through St. GEORGE'S CHANNEL, up BRISTOL CHANNEL,  
and to the ISLES of SCILLY.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Cornwall to St. Margaret's Point	N $\delta$ E	112	
Cape Cornwall to Cork	NNW $\frac{1}{2}$ W	125	
Cape Cornwall to the Old Head of Kinfale	NW $\delta$ N	135	
Cape Cornwall to Cape Clear	NW $\frac{1}{2}$ W	135	21 30
Cape Cornwall to the Seven Stones	W $\delta$ N	23	
Cape Cornwall to Scilly	W	31	

From the ISLES of SCILLY, through St. GEORGE'S CHANNEL, to different Places in ENGLAND and IRELAND.

From SCILLY Islands to Cape Clear	NW	109	21 30
Scilly to Kinfale	NNW	112	
Scilly to Cork	N $\delta$ W	110	
Scilly to Waterford	N $\delta$ E	115	
Scilly to St. Margaret's Point	NNE	120	
Scilly through St. George's Channel	NE $\frac{1}{2}$ N		
Scilly to the Smalls	N $\delta$ E	107	
Scilly to Milford-haven	NE $\delta$ E	113	
Scilly to Lundy Island	E $\delta$ N $\frac{1}{2}$ N	105	

Along the Coast of IRELAND.

From DUBLIN Bar to the outside of the Banks	SE	15	21 0
Along the outside of the Banks to St. Margaret's Point	SSW	78	
St. Margaret's Point to the Black Rock	SSW	3	
Black Rock to the Furlas Rocks	WSW	8	
Furlas Rocks to Waterford Harbour	WNW	14	
St. Margaret's Point to Waterford Harbour	WNW	33	
St. Margaret's Point to Tinker Rock	E $\delta$ S	4 $\frac{1}{2}$	



## Along the Coast of IRELAND.

							Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.	
From Tusker Rock to Waterford	—	—	—	—	—	—	WSW to NW	36		
Tusker along the Banks	—	—	—	—	—	—	NNE			
Tusker to Holy-head	—	—	—	—	—	—	ENE $\frac{1}{2}$ N	96		
Tusker to the Smalls	—	—	—	—	—	—	SE $\frac{1}{2}$ S	38		
Tusker to Cork	—	—	—	—	—	—	W $\frac{1}{2}$ S	82		
Tusker to the Old Head of Kinfale	—	—	—	—	—	—	W $\frac{1}{2}$ S	95		
Waterford to Dungarvan	—	—	—	—	—	—	W $\frac{1}{2}$ S	21		
Waterford to Cork	—	—	—	—	—	—	W $\frac{1}{2}$ S	56	19	30
Waterford to the Old Head of Kinfale	—	—	—	—	—	—	W $\frac{1}{2}$ S	69	18	30
Waterford to Cape Clear	—	—	—	—	—	—	W $\frac{1}{2}$ S	107		
Cork to the Old Head of Kinfale	—	—	—	—	—	—	SW $\frac{1}{2}$ W	14		
Old Head of Kinfale to Kinfale Harbour	—	—	—	—	—	—	NNE	3		
Old Head of Kinfale to Cape Clear	—	—	—	—	—	—	W $\frac{1}{2}$ S	38		
Cape Clear to Lundy Island	—	—	—	—	—	—	E $\frac{1}{2}$ S $\frac{1}{2}$ S	187		
Cape Clear to Milford-haven	—	—	—	—	—	—	E $\frac{1}{2}$ S	169		
Cape Clear to the Smalls	—	—	—	—	—	—	E	150		
Cape Clear to Mizen-head	—	—	—	—	—	—	NW $\frac{1}{2}$ W	13		
Mizen-head to the Dorfes	—	—	—	—	—	—	NW $\frac{1}{2}$ W	15	20	0
Mizen-head to the Shellocks	—	—	—	—	—	—	NW	36		
Shellocks to the Blasques	—	—	—	—	—	—	NNE	25		
Blasques to Loop-head, or the River of Limeric	—	—	—	—	—	—	E $\frac{1}{2}$ N $\frac{1}{2}$ N	35	20	30
The Blasques to the Islands of Arran	—	—	—	—	—	—	NE $\frac{1}{2}$ N	76		
Blasques to Slyne-head	—	—	—	—	—	—	NNE $\frac{1}{2}$ E	86		
Loop-head to the great Island of Arran	—	—	—	—	—	—	NNE $\frac{1}{2}$ E	40		
Loop-head to Slyne-head	—	—	—	—	—	—	N $\frac{1}{2}$ E $\frac{1}{2}$ E	58		
Loop-head to Eniskerry Islands	—	—	—	—	—	—	NE $\frac{1}{2}$ E	21		
Eniskerry Islands to the South Passage	—	—	—	—	—	—	NE $\frac{1}{2}$ E	15		

## Along the Coast of IRELAND.

	Course by the Compass.	Distance in Miles	Variation	
			N. Westerly.	Deg. Min.
From Great Arran to Black-head	ESE	24		
Black-head to Galway	E $\frac{1}{2}$ N	12		
Great Arran to Slyne head	NNW	24		
Slyne-head to Achill-head	NNE	34	20	30
Slyne-head to the Black Rock	N $\frac{1}{2}$ E	38		
Black Rock to St. Kilda	NE $\frac{1}{2}$ N	237	22	30
Black Rock to Barry-head	NE $\frac{1}{2}$ E	190		
Black Rock to Broad-haven Point	NE $\frac{1}{2}$ E	18		
Broad-haven Point or Island to Tory Island	ENE $\frac{1}{2}$ N	88		
Broad-haven along-shore to Sligo	E $\frac{1}{2}$ S $\frac{1}{4}$ S	55		
Broad-haven to Donegal	E $\frac{1}{2}$ S	73		
Broad-haven to Cape Telling	E $\frac{1}{2}$ N	48		
Broad-haven to the Island of Arran	EN $\frac{1}{2}$ N	67		
Broad-haven to the Island of Tory	ENE	87	21	0
Cape Telling to Sligo	S $\frac{1}{2}$ E	33		
Cape Telling along-shore to Donegal	SE to E	36		
Cape Telling to the Island of Arran	NE $\frac{1}{2}$ N	21		
Island Arran to the Island Tory	NE $\frac{1}{2}$ E	18		
Island Tory to Lough Swilla	E $\frac{1}{2}$ S	25		
Island Tory to the Island Eusterhul	E	36		
Lough Swilla to the Island Eusterhul	EN	12		
Eusterhul Island to Londonderry Harbour	SE $\frac{1}{2}$ E	14		
Eusterhul Island to the Skerries	SE $\frac{1}{2}$ E	21		
Eusterhul Island to Rathlin Island	E $\frac{1}{2}$ S $\frac{1}{2}$ S	31		
Through between Rathlin Island and the Main	ESE	6		
From Londonderry Harbour to the Skerries	E $\frac{1}{2}$ S	9		
Londonderry to Rathlin Island	E	18		



## Along the Coast of IRELAND.

						Course by the Compass.	Distance in Miles.	Variation N. Westerly.
From Rathlin Island to Fair Foreland	—	—	—	—	—	ESE	3	Deg. Min.
Fair Foreland to the Maiden Rocks	—	—	—	—	—	SSE	21	21 0
Fair Foreland along Shore to Carrickfergus Bay	—	—	—	—	—	S $\delta$ E $\frac{1}{2}$ E	32	21 30
Fair Foreland to Copeland Island or Light	—	—	—	—	—	S $\delta$ E $\frac{1}{2}$ E	38	
Cope Island to the North and South Rock	—	—	—	—	—	S $\frac{1}{2}$ E	19	
North and South Rocks to St. John's Point	—	—	—	—	—	W $\delta$ S	12	20 30
North and South Rocks to Newry Bar	—	—	—	—	—	WSW $\frac{1}{2}$ S	33	
Newry Bar to Dundalk Bar	—	—	—	—	—	WSW to WNW	10	
North and South Rocks to Drogheda	—	—	—	—	—	SW $\delta$ W	50	19 30
North and South Rocks to Dublin Bar	—	—	—	—	—	SW $\delta$ S	65	
Newry Bar to Dublin Bar	—	—	—	—	—	S $\delta$ W	42	
Along Shore from Dundalk to Dublin	—	—	—	—	—	N & S	43	

## From SCILLY to different Places in FRANCE, and along the ENGLISH COAST to the SOUTH FORELAND.

From SCILLY Islands to the Island of Ushant	—	—	—	—	—	S $\delta$ E	100	21 30
Scilly to Morlaix, or the Island Bas	—	—	—	—	—	SE $\frac{3}{4}$ S	142	
Scilly past Brehent Island to St. Maloes	—	—	—	—	—	SE $\frac{1}{4}$ E	193	
Scilly to the Island of Jerfey	—	—	—	—	—	ESE $\frac{1}{4}$ S	175	
Scilly to Guernsey	—	—	—	—	—	ESE $\frac{1}{2}$ S	160	
Scilly to the Caskets	—	—	—	—	—	ESE	172	
Scilly to the Land's End	—	—	—	—	—	E $\frac{1}{4}$ S	28	
Scilly to the Wolf Rock	—	—	—	—	—	ESE	20	
Scilly to the Lizard	—	—	—	—	—	ESE	50	
Scilly to the Seven Stones	—	—	—	—	—	NE $\frac{1}{2}$ E	8	
Seven Stones to Cape Cornwall	—	—	—	—	—	E $\delta$ S	23	
Seven Stones to the Land's End	—	—	—	—	—	SE $\delta$ E	25	

From SCILLY to different Places in FRANCE, and along the ENGLISH COAST to the  
SOUTH FORELAND.

						Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Seven Stones to the Wolf Rock	—	—	—	—	—	SSE $\frac{1}{2}$ E	21	
Wolf Rock to the Longships	—	—	—	—	—	NE $\frac{1}{4}$ N	13	
Wolf Rock to the Land's End	—	—	—	—	—	ENE $\frac{1}{2}$ N	11	
Wolf Rock to the Rundlestones	—	—	—	—	—	ENE	9	
Wolf Rock to the Lizard	—	—	—	—	—	E $\delta$ S $\frac{1}{2}$ S	30	
Land's End to the Longships	—	—	—	—	—	N $\delta$ W	6	
Land's End to the Rundlestones	—	—	—	—	—	S $\delta$ W	2	
Land's End to Mount's Bay	—	—	—	—	—	E $\delta$ S to NE	10	
Land's End to the Lizard	—	—	—	—	—	SE $\frac{1}{4}$ E	24	21 30
Land's End to Ushant	—	—	—	—	—	S $\frac{1}{2}$ W	98	
Lizard to Ushant	—	—	—	—	—	S $\delta$ W $\frac{1}{4}$ W	86	
Lizard to the Island of Bas, going to Morlaix	—	—	—	—	—	S $\delta$ E $\frac{1}{2}$ E	86	
Lizard to St. Maloes	—	—	—	—	—	SE $\frac{1}{2}$ S	150	
Lizard to Jerfey	—	—	—	—	—	SE $\frac{1}{4}$ E	125	
Lizard to Guernsey	—	—	—	—	—	ESE $\frac{1}{2}$ S	108	
Lizard to the Caskets	—	—	—	—	—	ESE	118	
Lizard to the Start Point	—	—	—	—	—	E $\frac{1}{2}$ S	67	
Lizard to the Eddystone Light	—	—	—	—	—	E	45	
Lizard to the Ramhead of Plymouth	—	—	—	—	—	E $\delta$ N	52	
Lizard to Falmouth	—	—	—	—	—	ENE to N $\delta$ E	22	
Falmouth to the Eddystone	—	—	—	—	—	E $\delta$ S $\frac{1}{4}$ S	36	
Falmouth to the Start	—	—	—	—	—	E $\delta$ S $\frac{1}{2}$ S	56	
Falmouth to the Ramhead	—	—	—	—	—	E	38	
Ramhead to Plymouth	—	—	—	—	—	NE $\delta$ E to NE $\delta$ N	5	
Ramhead to the Eddystone	—	—	—	—	—	S $\delta$ W	13	
Ramhead to the Bolt-head	—	—	—	—	—	SE	17	
Bolt-head to the Start	—	—	—	—	—	E $\delta$ S	5	21 0



From SCILLY to different Places in FRANCE, and along the ENGLISH COAST to  
the SOUTH FORELAND.

						Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Eddystone to the Start	—	—	—	—	—	E $\frac{1}{2}$ S	27	
Start to Ushant	—	—	—	—	—	SW $\frac{1}{2}$ S	118	21 0
Start to Morlaix	—	—	—	—	—	SSW $\frac{1}{2}$ W	90	
Start to St. Maloes	—	—	—	—	—	S $\frac{1}{2}$ E $\frac{1}{4}$ E	112	
Start to Guernsey	—	—	—	—	—	SSE $\frac{1}{2}$ E	54	
Start to the Caskets	—	—	—	—	—	SE $\frac{1}{2}$ E	59	
Start to Cape de la Hogue	—	—	—	—	—	SE $\frac{1}{2}$ E	75	
Start to Dunnose	—	—	—	—	—	E	107	
Start to Portland	—	—	—	—	—	E $\frac{1}{2}$ N	54	
Start to Berry-head	—	—	—	—	—	NE $\frac{1}{2}$ E	18	
Start to Dartmouth	—	—	—	—	—	NE $\frac{1}{2}$ N	13	
Berry-head to Portland	—	—	—	—	—	E	42	
Berry-head to Exmouth Bar	—	—	—	—	—	NE $\frac{1}{2}$ N	19	
Exmouth Bar to Portland	—	—	—	—	—	SE $\frac{1}{2}$ E	36	
Portland to Ushant	—	—	—	—	—	WSW $\frac{1}{2}$ S	167	
Portland to Guernsey	—	—	—	—	—	SSW $\frac{1}{2}$ W	60	
Portland to the Caskets	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	45	
Portland to Cape de la Hogue	—	—	—	—	—	S $\frac{1}{4}$ E	49	
Portland to Cherburgh	—	—	—	—	—	S $\frac{1}{2}$ E	60	
Portland to Cape Barfleur	—	—	—	—	—	SSE $\frac{1}{2}$ E	70	
Portland to Havre de-grace	—	—	—	—	—	SE $\frac{1}{2}$ S	120	
Portland to Dunnose	—	—	—	—	—	ESE $\frac{1}{2}$ S	53	21 0
Portland to Peverel Point	—	—	—	—	—	E	21	
Bill of Portland to Weymouth	—	—	—	—	—	NE to N	7	
Bill of Portland to the outer part of the Race	—	—	—	—	—	S $\frac{1}{2}$ W	3	
Peverel Point to Dunnose	—	—	—	—	—	SE $\frac{1}{2}$ E	28	
Peverel Point to the Needles	—	—	—	—	—	E $\frac{1}{2}$ N	12	21 30

From Scilly to different Places in FRANCE, and along the ENGLISH COAST to  
the SOUTH FORELAND.

	Course by the Compass.	Distance in Miles	Variation N W E S deg, min.
From Needles to Dunnose	SE $\frac{1}{2}$ S	14	
Dunnose to Uihant	SW $\frac{1}{2}$ W	210	
Dunnose to the Caskets	WSW $\frac{1}{2}$ S	72	
Dunnose to Cape de la Hogue	S $\frac{1}{2}$ W	58	
Dunnose to Cherburgh	SW $\frac{1}{2}$ S	58	
Dunnose to Cape Barfleur	SWW $\frac{1}{2}$ W	51	
Dunnose to Havre-de-grace	SSE	82	
Dunnose to Dieppe	SE $\frac{1}{2}$ E	102	
Dunnose to Beachy-head	E $\frac{1}{2}$ S to E	66	
Dunnose to the outside of the Oars	E $\frac{1}{2}$ S	22	
Dunnose to Bembridge Point or Ledge	ENE	10	
Beachy-head to Cape de la Hogue	W $\frac{1}{2}$ S $\frac{1}{2}$ S	115	
Beachy-head to Cape Barfleur	WSW $\frac{1}{2}$ S	93	
Beachy-head to Havre-de-grace	SSW $\frac{1}{2}$ W	81	
Beachy-head to Dieppe	S $\frac{1}{2}$ E	60	21 30
Beachy-head to Dungeness	E $\frac{1}{2}$ N	27	
Beachy-head to Fair-leigh	ENE	14	
Dungeness to Havre-de-grace	SW $\frac{1}{2}$ S	93	21 0
Dungeness to Dieppe	SW	57	
Dungeness to Boulogne	SE $\frac{1}{2}$ S	27	
Dungeness to Calais	E $\frac{1}{2}$ S	30	
Dungeness to the South Foreland	ENE	21	
Dungeness to Dover	ENE $\frac{1}{2}$ N	17	
Dover to the South Foreland	ENE	3 $\frac{1}{2}$	
Up Channel from a fair Birth off Scilly up to Dungeness	E $\frac{1}{2}$ S	335	20 30



From USHANT-ISLAND along the COAST of FRANCE, FLANDERS, and  
HOLLAND, to the TEXEL.

From	Course by the Compass.	Distance in Miles.	Variation N. Westerly.	
			Deg.	Min.
From <b>U</b> SHANT to the Caskets	E $\frac{1}{2}$ N $\frac{1}{2}$ N	135	20	30
Ushant to Guernsey	E $\frac{1}{2}$ N	118		
Ushant along Shore to the Isle of Bas	E $\frac{1}{2}$ N	50		
Bas Island to Morlaix	SSE	8		
Bas Island to St. Michelengrave	ESE $\frac{1}{2}$ S	18	20	30
Bas Island to the Caskets	ENE	88		
Bas Island to Guernsey	ENE	70		
Guernsey Island to St. Maloes	E	63		
Guernsey to Jersey	SSE	21		
Guernsey to the Caskets	NE $\frac{1}{2}$ E	18		
Guernsey to Cape de la Hogue	E $\frac{1}{4}$ N	28		
Guernsey to Alderney	E $\frac{1}{2}$ N	15		
Caskets to Alderney	SE $\frac{1}{2}$ E	11		
Alderney to Cape de la Hogue	ESE	9		
Cape de la Hogue to Cherburgh	SE	12		
Cherburgh to Cape Barfleur	ENE to SE	13		
Cape Barfleur to Havre-de-grace	SE $\frac{1}{2}$ E	56		
Cape Barfleur to Dieppe	E $\frac{1}{4}$ S	94		
Havre-de-grace to Cape Antifer	N $\frac{1}{2}$ $\frac{1}{2}$ N	15		
Cape Antifer to Dieppe	E $\frac{1}{2}$ N	37		

From CAPE ANTIFER along the COAST of FRANCE and HOLLAND to the TEXEL.

From <b>C</b> APE Antifer to Boulogne	ENE $\frac{1}{2}$ N	76	21	0
Cape Antifer to Calais	NE $\frac{1}{2}$ E	95		
Dieppe to Boulogne	NE $\frac{1}{2}$ N	47		
Boulogne to Calais	NNE to ENE	22	21	30

## From CAPE ANTIFER along the COAST of FRANCE and HOLLAND to the TEXEL.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Calais along-shore to Dunkirk	E $\frac{1}{2}$ N	15	
Calais to Newport	E $\frac{1}{2}$ N $\frac{1}{2}$ N	31	
Calais to Ostend	E $\frac{1}{2}$ N $\frac{1}{2}$ N	37	
Calais to Flushing	E $\frac{1}{2}$ N $\frac{1}{2}$ N	63	
Calais to West Capple	ENE	60	
Calais to Goree Gateway	ENE $\frac{1}{2}$ N	90	
Calais to the Texel	NE $\frac{1}{2}$ E	160	21 0
Goree Gateway to the Texel	NE	74	

## From the SOUTH FORELAND to different Places in FRANCE, HOLLAND, and NORWAY.

From SOUTH Foreland to the South-sand-head	E $\frac{1}{2}$ S	3	21 30
South Foreland to the Downs	NNE	6	
South Foreland through the Gull Stream to the North Foreland	NE $\frac{1}{2}$ N	18	
South Foreland to Calais	SE $\frac{1}{2}$ S	22	
South Foreland to Dunkirk	SE $\frac{1}{2}$ E	33	
South Foreland to Newport	E $\frac{1}{2}$ S $\frac{1}{4}$ S	45	
South Foreland to Ostend	E $\frac{1}{2}$ S $\frac{1}{2}$ S	51	
South Foreland to West Capple	E $\frac{1}{4}$ N	70	
South Foreland to Goree Gateway	E $\frac{1}{2}$ N	97	
South Foreland to the Texel	ENE $\frac{1}{4}$ N	160	
South Foreland to the Naze of Norway	NE $\frac{1}{4}$ N	456	21 0
A Fair-way between the South Foreland and Calais, over the Kentish-well to the North Sea	NE		21 30
North Foreland to Dunkirk	SE $\frac{1}{2}$ S	40	
North Foreland to Ostend	ESE $\frac{1}{2}$ S	51	



From the SOUTH FORELAND to different Places in FRANCE, HOLLAND, and  
NORWAY.

					Course by the Compass.	Distance in Miles	Variation N. Westerly. Deg. Min.
From North Foreland to West Capple	_____	_____	_____	_____	E $\frac{1}{2}$ S	57	
North Foreland to Goree Gateway	_____	_____	_____	_____	E $\frac{1}{2}$ N	91	
North Foreland to the Texel	_____	_____	_____	_____	ENE	148	
North Foreland to the North-sand-head	_____	_____	_____	_____	SE	7	
North Foreland to the Kentish Knock	_____	_____	_____	_____	NE	20	
North Foreland to the Galloper	_____	_____	_____	_____	NE $\delta$ E	28	
Kentish Knock to the Galloper	_____	_____	_____	_____	E $\delta$ N	8	
Kentish Knock to the Long-sand-head	_____	_____	_____	_____	N	4	
Long-sand-head to the Galloper	_____	_____	_____	_____	E	8	21 30
Long-sand-head to the Gabbard	_____	_____	_____	_____	NE $\frac{1}{2}$ N	19	
Long-sand-head to Goree Gateway	_____	_____	_____	_____	E $\frac{1}{2}$ S	78	
Long-sand-head to the Texel	_____	_____	_____	_____	E $\delta$ N $\frac{1}{2}$ N	130	
Long-sand-head to Lowestoff	_____	_____	_____	_____	N $\delta$ E $\frac{1}{2}$ E	54	21 0
Long-sand-head to Orfordness	_____	_____	_____	_____	N $\delta$ E	28	
Long-sand-head to the Shipwash	_____	_____	_____	_____	N $\frac{1}{2}$ W	14	
Long-sand-head to Baudsey Cliff	_____	_____	_____	_____	NNW $\frac{1}{4}$ N		
Long sand-head to the Buoy of the Gunfleet	_____	_____	_____	_____	NW $\delta$ W	15	
Buoy of the Gunfleet to Goree Gateway	_____	_____	_____	_____	E $\delta$ S $\frac{1}{2}$ S	92	21 30
Buoy of the Gunfleet to the Texel	_____	_____	_____	_____	E $\delta$ N $\frac{1}{4}$ N	140	
Orfordness to Dunkirk	_____	_____	_____	_____	S $\frac{1}{4}$ E	76	
Orfordness to the North-end of the Shipwash	_____	_____	_____	_____	SSE	5	21 0
Orfordness to Ostend	_____	_____	_____	_____	SSE	75	21 30
Orfordness to West Capple	_____	_____	_____	_____	SE $\frac{1}{2}$ S	74	
Orfordness to Goree Gateway	_____	_____	_____	_____	ESE $\frac{1}{4}$ S	84	
Orfordness to the Texel	_____	_____	_____	_____	E $\frac{1}{2}$ N	120	
Orfordness to the Naze of Norway	_____	_____	_____	_____	NE	381	21 0
Lowestoff to Dunkirk	_____	_____	_____	_____	S $\frac{1}{4}$ W	95	21 30

From the SOUTH FORELAND to different Places in FRANCE, HOLLAND, and  
NORWAY.

							Courſe by the Compaſs.	Diſtance in Miles.	De- g.
From Lowestoff to Ostend	—	—	—	—	—	—	SSE	89	
Lowestoff to West Capple	—	—	—	—	—	—	SSE $\frac{1}{2}$ E	83	21 30
Lowestoff to Goree Quay	—	—	—	—	—	—	SE	85	
Lowestoff to the Texel	—	—	—	—	—	—	E $\frac{1}{2}$ S	108	
Lowestoff to Holy-land Island	—	—	—	—	—	—	E $\frac{1}{2}$ N	255	21 30
Lowestoff to the Naze of Norway	—	—	—	—	—	—	NE $\frac{1}{2}$ E	354	
Lowestoff to Boevenbergen, the West Point of Jutland	—	—	—	—	—	—	NE $\frac{1}{2}$ E	328	
Lowestoff to North Bergen	—	—	—	—	—	—	NNE $\frac{1}{2}$ E	468	
Cromer to the Naze of Norway	—	—	—	—	—	—	NE $\frac{1}{2}$ E	336	
Cromer to Shetland	—	—	—	—	—	—	N $\frac{1}{2}$ E	414	21 30
Cromer to Buchanefs	—	—	—	—	—	—	N $\frac{1}{4}$ W	310	
Humber to the Texel	—	—	—	—	—	—	ESE $\frac{1}{2}$ S	162	21 0
Humber to the Holy-land Islands	—	—	—	—	—	—	E $\frac{1}{2}$ S	273	
Humber to Boevenbergen	—	—	—	—	—	—	ENE $\frac{1}{2}$ E	315	
Humber to the Naze of Norway	—	—	—	—	—	—	ENE $\frac{1}{2}$ N	325	
Flamborough-head to the Texel	—	—	—	—	—	—	SE $\frac{1}{2}$ E	176	
Flamborough-head to the Holy-land Islands	—	—	—	—	—	—	E $\frac{1}{2}$ S	281	
Flamborough-head to Boevenbergen	—	—	—	—	—	—	E $\frac{1}{2}$ N $\frac{1}{4}$ N	318	21 30
Flamborough-head to the Naze of Norway	—	—	—	—	—	—	ENE $\frac{1}{4}$ N	313	
Flamborough-head to North Bergen	—	—	—	—	—	—	NE $\frac{1}{2}$ N	396	
Flamborough-head to Shetland	—	—	—	—	—	—	N $\frac{1}{2}$ E	347	
Flamborough-head to Buchanefs	—	—	—	—	—	—	N $\frac{1}{4}$ E	249	21 30
Newcastle to the Texel	—	—	—	—	—	—	SE	250	
Newcastle to Holy-land Island	—	—	—	—	—	—	ESE	335	
Newcastle to Boevenbergen	—	—	—	—	—	—	E	338	
Newcastle to the Naze of Norway	—	—	—	—	—	—	E $\frac{1}{2}$ N	327	
Berwick to the Texel	—	—	—	—	—	—	SE $\frac{1}{2}$ S	300	



From

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From the SOUTH FORELAND to different Places in FRANCE, HOLLAND, and  
NORWAY.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Berwick to Holy-land Island	ESE $\frac{1}{4}$ S	366	
Berwick to Boevenbergen, the West Point of Jutland	E $\frac{1}{4}$ S	346	
Berwick to the Naze of Norway	E $\frac{1}{4}$ S	320	
Berwick to North Bergen	ENE $\frac{1}{4}$ N	340	
Edinburgh Frith to the Naze of Norway	E $\frac{1}{4}$ S	324	
Edinburgh Frith to North Bergen	ENE	332	
Buchanefs to the outside of Yarmouth Sands	S $\frac{1}{2}$ E	350	
Buchanefs to the Texel	S $\frac{1}{2}$ E $\frac{1}{4}$ E	373	
Buchanefs to Holy-land Island	SE $\frac{1}{4}$ S	396	
Buchanefs to the Naze of Norway	E $\frac{1}{2}$ S $\frac{1}{4}$ S	288	22 0
Petland Frith to the Naze of Norway	ESE $\frac{1}{2}$ S	328	
Fair Isle to the Texel	S $\frac{1}{2}$ E	443	
Fair Isle to Holy-land Island	SSE $\frac{1}{4}$ E	445	
Fair Isle to the Naze of Norway	SE $\frac{1}{2}$ E	290	
Fair Isle to North Bergen	E $\frac{1}{2}$ S	210	21 0
Lerwick in Shetland to Cromer	S $\frac{1}{4}$ W	432	
Lerwick to the outside of Yarmouth Sands	S	462	
Lerwick to the Texel	S $\frac{1}{2}$ E	466	
Lerwick to Holy-land Island	SSE $\frac{1}{4}$ E	460	
Lerwick to the Naze of Norway	SE	286	
Lerwick to North Bergen	E $\frac{1}{2}$ S $\frac{1}{4}$ S	180	

From the TEXEL, along the COAST of HOLLAND, JUTLAND, and NORWAY, to NORTH BERGEN.

From <b>T</b> EXEL along-shore to Holy-land Island	E $\frac{1}{2}$ N	153	19 30
Texel to Boevenbergen	NE $\frac{1}{4}$ N	240	
Texel to the Naze of Norway	NNE $\frac{1}{4}$ E	290	
Holy-land Island to the first Buoy of the Wefer	SSW $\frac{1}{4}$ W	13	

From the **TEXEL**, along the **COAST of HOLLAND, JUTLAND, and NORWAY**, to  
**NORTH BERGEN**.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From <b>Holy-land Island</b> to the red Buoy of the Elve	SE	15	
<b>Holy-land Island</b> to <b>Boevenbergen</b>	N $\frac{1}{2}$ E	138	
<b>Holy-land Island</b> to the Naze of Norway	N $\frac{1}{4}$ E	207	
<b>Holy-land Island</b> to <b>North Bergen</b>	N $\frac{1}{4}$ W	360	

From **BOEVENBERGEN**, or West Point of **JUTLAND**, to different Places in **NORWAY**, up the **CATIGUT**, through  
the **SOUND** and **GROUND**S, to the **DRAKER BUOY**.

From <b>B</b> <b>OEVENBERGEN</b> to the Naze of Norway	N $\frac{1}{2}$ W $\frac{1}{2}$ W	74	19	0
<b>Boevenbergen</b> to <b>Fleckery</b>	N $\frac{1}{2}$ E	70		
<b>Boevenbergen</b> to <b>Mardou</b>	N $\frac{1}{2}$ E $\frac{1}{2}$ E	100	18	30
<b>Boevenbergen</b> to <b>Crokery</b>	N $\frac{1}{2}$ E $\frac{1}{2}$ E	114		
<b>Boevenbergen</b> to <b>Longfoud</b>	N $\frac{1}{2}$ E $\frac{1}{2}$ E	120		
<b>Boevenbergen</b> to <b>Father Island</b>	N $\frac{1}{2}$ E $\frac{1}{2}$ N	125		
<b>Boevenbergen</b> along-shore to the Scaw	N $\frac{1}{2}$ E to E $\frac{1}{2}$ N	81		
<b>Naze of Norway</b> to <b>Fleckery</b>	E $\frac{1}{2}$ S	25		
<b>Fleckery</b> to <b>Father Island</b>	E $\frac{1}{2}$ N	80		
<b>Naze</b> to the <b>Scaw</b>	E $\frac{1}{2}$ S $\frac{1}{2}$ S	100		
<b>Scaw Reef</b> to <b>Father Island</b>	N	60	18	0
<b>Scaw Reef</b> to the <b>Paternosters</b>	E $\frac{1}{2}$ N	19		
<b>Scaw Reef</b> to <b>Masterland Castle</b>	E	30		
<b>Scaw Reef</b> to <b>Wingo Beacon</b>	S $\frac{1}{2}$ E $\frac{1}{2}$ E	31		
<b>Scaw Reef</b> to the <b>Nyding</b>	S $\frac{1}{2}$ E $\frac{1}{2}$ E	47		
<b>Scaw Reef</b> to the <b>Kole</b>	S $\frac{1}{2}$ E $\frac{1}{2}$ E	110	17	0
<b>Scaw Reef</b> to the <b>Trinnels</b>	S $\frac{1}{2}$ E $\frac{1}{2}$ E	28		
<b>Scaw Reef</b> along-shore to <b>Alburg</b>	SSW	48		
<b>Trinnels</b> to the <b>Paternosters</b>	N $\frac{1}{2}$ E	29		



From BORVENBERGEN, or West Point of JUTLAND, to different Places in NORWAY,  
up the CATAGUT, through the SOUND and GROUNDS, to the DRAKER BUOY.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly.	
			Deg.	Min.
From Trinnels to Masterland Castle	NE $\frac{1}{2}$ N	31	16	0
Trinnels to the Wingo Beacon	NE $\frac{1}{2}$ E	16		
Trinnels to the Nyding	SE $\frac{1}{2}$ E	16	16	0
Trinnels to the Kole	S $\frac{1}{2}$ E $\frac{1}{2}$ E	78	15	30
Trinnels to the Anout Reef	S $\frac{1}{2}$ E	48		
Anout Reef to the Nyding	N $\frac{1}{2}$ E $\frac{1}{2}$ E	35		
Anout Reef to the Kole	SSE	34		
Paternosters to Masterland	E $\frac{1}{2}$ S	12		
Paternosters to Wingo Beacon	SSE	21		
Wingo to the Nyding	S	20		
Nyding to the Kole	S $\frac{1}{2}$ E	60		
Kole to Elfineur Castle	SE $\frac{1}{2}$ S to S $\frac{1}{2}$ E	16	14	30
Elfineur to Ween Island	S $\frac{1}{2}$ E	8		
Elfineur Castle to the First Buoy of the Grounds	S	20		
Elfineur Castle to Copenhagen Road	S $\frac{1}{2}$ W	20		
Elfineur Castle to the North End of Southolm Castle	S $\frac{1}{2}$ E	17		
Elfineur Castle to Landskroon	SE $\frac{1}{2}$ S $\frac{1}{2}$ S	12		
Elfineur Castle to the East End of Huen Island	SSE	8		
East End of Huen Island to Malmut, or Elboge	S $\frac{1}{2}$ E $\frac{1}{2}$ E	20		
Malmut to Draker Buoy	W	11	14	0
Malmut to Falsterborn Reef	SW $\frac{1}{2}$ W	18		
First Buoy to Second and Third Buoy	S $\frac{1}{2}$ W	2 $\frac{1}{2}$		
Third Buoy to Draker Buoy	S	6		

From **DRAKER BUOY** up the **BALTIC**, and from Place to Place up to  
**CRONSTADT.**

From	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
<b>D</b> RAKER BUOY to Falsterborn Reef	S $\frac{1}{2}$ W	16	14 0
Draker Buoy to Meun Island	S $\frac{1}{2}$ W	29	
Draker Buoy to Stedan Point	SW	16	
Steden Point to Falsterborn Reef	ESE	10	
Falsterborn Reef to Meun Island	SW $\frac{1}{2}$ S	12	
Falsterborn to Rugen Island	SE $\frac{1}{2}$ S	44	
Falsterborn to Colberg	SE $\frac{1}{2}$ E	118	13 30
Falsterborn to the South-end of Bornholm	ESE	76	
Falsterborn to the North-end of Bornholm	E $\frac{1}{2}$ S	63	
Falsterborn to Sand-hammer Point	E $\frac{1}{2}$ S	48	
Bornholm North-end to Sand-hammer	NW	18	
Bornholm North-end to Carlsroon	NE $\frac{1}{2}$ N	46	
Bornholm North-end to the South Point of Oeland	ENE $\frac{1}{2}$ N	69	
Bornholm to the South-end of Gotland	ENE $\frac{1}{2}$ N	145	
Bornholm North-end to Derwinda	ENE $\frac{1}{2}$ E	265	
Bornholm North-end to Memel	E	219	
Bornholm North-end to Koningsberg	E $\frac{1}{2}$ S $\frac{1}{2}$ S	204	
Bornholm North-end to Ross-head	E $\frac{1}{2}$ S $\frac{1}{2}$ S	138	
Bornholm North-end to the Earholms	E $\frac{1}{2}$ S	14	
Bornholm South-end to Rugen Island	W $\frac{1}{2}$ S $\frac{1}{2}$ W	38	
Bornholm South-end to Stettin	SSW	57	13 0
Bornholm South-end to Colberg	SSE $\frac{1}{2}$ E	51	
Bornholm South-end to Ross-head	E $\frac{1}{2}$ S	123	
Bornholm South-end to Memel	E $\frac{1}{2}$ N	213	
Bornholm South-end to Derwinda	ENE	262	
Bornholm South-end to the South-end of Gotland	NE $\frac{1}{2}$ E	147	
Bornholm South-end to the South Point of Oeland	NE $\frac{1}{2}$ E	73	



## From DRAKER BUOY up the BALTIC, and from Place to Place up to CROWSTADT.

						Course by the	Distance	Variation
						Compass.	in Miles.	N. Westerly.
From Bornholm South-end to the Earholms	—	—	—	—	—	N $\frac{1}{2}$ E	16	Deg. Min.
Meun Island to Rugen Island	—	—	—	—	—	SE $\frac{1}{2}$ E	36	
Rugen Island to Stettin	—	—	—	—	—	SSE	40	
Rugen Island to Colberg	—	—	—	—	—	SE $\frac{1}{2}$ E	72	
Rugen Island to Rofs-head	—	—	—	—	—	E	162	
Rofs-head to the Heel of Dantzic	—	—	—	—	—	SE	30	
Heel of Dantzic to Dantzic	—	—	—	—	—	S	15	
Heel of Dantzic to Koningsberg	—	—	—	—	—	E	45	
Heel of Dantzic to Memel	—	—	—	—	—	NE $\frac{1}{2}$ E	100	
Heel of Dantzic to Derwinda	—	—	—	—	—	NNE $\frac{1}{2}$ E	160	
Heel of Dantzic to Gotland	—	—	—	—	—	N $\frac{1}{2}$ W	140	
Koningsberg to Memel	—	—	—	—	—	N to NNE	55	
Memel to Derwinda	—	—	—	—	—	NNW to NNE	84	
Derwinda to Domenefs	—	—	—	—	—	NE to E $\frac{1}{2}$ N	42	13
Derwinda to the Oefel Light	—	—	—	—	—	NE $\frac{1}{2}$ E	39	
Domenefs to Riga	—	—	—	—	—	SE $\frac{1}{2}$ S	63	
Domenefs to Runo Island	—	—	—	—	—	E $\frac{1}{2}$ S	21	
Domenefs to the Oefel Light	—	—	—	—	—	NW $\frac{1}{2}$ W	18	
Runo Island to Riga	—	—	—	—	—	S $\frac{1}{2}$ E $\frac{1}{2}$ E	48	
Derwinda to the West-part of the Oefel	—	—	—	—	—	N	72	
Filfand Island, or the West-part of the Oefel, to Dagerort	—	—	—	—	—	NNE	30	
Derwinda to the South-end of Gotland	—	—	—	—	—	W	118	
Derwinda to the South-end of Oeland	—	—	—	—	—	W $\frac{1}{2}$ S	190	
Sand-hammer to Carlscroon	—	—	—	—	—	NE $\frac{1}{2}$ E	50	
Sand-hammer to the South-end of Oeland	—	—	—	—	—	ENE	74	
South-end of Oeland along-shore to the North-end	—	—	—	—	—	NNE $\frac{1}{2}$ E	63	
North end of Oeland to Landfort	—	—	—	—	—	NNE	81	

From DRAKER BUOY up the BALTIC, and from Place to Place up to CRONSTADT.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From North-end of Oeland to the South-end of Gotland	E $\delta$ S $\frac{1}{2}$ S	40	
South-end of Oeland to the South-end of Gotland	NE $\delta$ E	78	
South-end of Gotland to Oftergard	NE $\delta$ E	45	
South-end of Gotland to Landsfort	N	96	
Oftergard to the North-end of Gotland	NE $\delta$ E $\frac{1}{2}$ E	33	
Oftergard to Derwinda	ESE	81	
Oftergard to Domenefs	E $\frac{1}{2}$ S	114	13 0
Oftergard to Dagerort	NE $\frac{1}{2}$ E	122	11 0
Dagerort to Sybronefs	NE $\delta$ E	14	
Sybronefs to Otgenholm	E $\delta$ N $\frac{1}{2}$ N	33	
Dagerort Light-house to Nargin Island in a Fair-way	ENE	83	5 0
Nargin Island to Cockscar in a Fair-way	E $\delta$ N	18	3 0
Nargin to the North-end of Hogland Island	E $\delta$ N $\frac{1}{2}$ N	83	0 0
North-end of Hogland to Sukicar Reef	E $\frac{1}{2}$ S	46	
Sukicar Reef to the Tolbeacon	E $\delta$ S	39	
Tolbeacon to Cronstadt, or the Port of Peterfburgh	E to NE	10	

From the NAZE to different Places in NORWAY, FINMARK, LAPLAND, MUSCOVY, and NOVA ZEMBLA.

From THE Naze to Bishop's Cap	WN	7	21 30
The Bishop's Cap to Hitteroe Islands	NW $\frac{3}{4}$ W	20	
Hitteroe Islands to the Wifers	N $\delta$ W	72	
Wifers to Jett Sound, going into North Bergen	NNE $\frac{1}{4}$ E	79	13 0
Lerwick to North Bergen	E $\delta$ S $\frac{1}{2}$ S	277	
Bergen to South Head	N	108	16 52
South Head to Swinen Rocks	NE	48	
Swinen to Swartos	NE $\delta$ N	90	11 1



From the NAZE to different Places in NORWAY, FINMARK, LAPLAND, MUSCOVY,  
and NOVA ZEMBLA.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Swartos to Drontheim	E	63	
Drontheim to Rust Islands	N $\frac{1}{2}$ W	170	
Rust Islands to Loffoet Isle	NE	110	
Loffoet to Westrol Island	E $\frac{1}{2}$ N $\frac{1}{2}$ N	60	8 26
Westrol to Samen Island	NE $\frac{1}{2}$ E $\frac{1}{2}$ E	72	
Samen Island to Trom Sound Island	E $\frac{1}{2}$ N $\frac{1}{2}$ N	58	
Trom Sound Island to Sanden Island	E $\frac{1}{2}$ N $\frac{1}{2}$ N	90	5 37
Sanden Island to the North Cape	E $\frac{1}{2}$ N	120	
North Cape to Ward-house Island	E $\frac{1}{2}$ S $\frac{1}{2}$ S	204	2 0
Ward-house Island to Fisher's Island	SE $\frac{1}{2}$ S	50	
Fisher's Island to Kilder Island	SE	45	
Lerwick to Merchant's Foreland, in Iceland	WNW $\frac{1}{4}$ W	489	2 0
Lerwick to Horn Sound in Greenland	NE $\frac{1}{2}$ N	1119	
Lerwick to Hackluyt's Headland in Greenland	NNE $\frac{1}{4}$ E	1254	
Fisher's Island to the River Kola	SE $\frac{1}{2}$ S	48	
Kilder Island to Tiere Biere	E $\frac{1}{2}$ S	18	
Tiere Biere to Seven Islands	ESE	60	0 0
Seven Islands to Cape Sweet Noze	E $\frac{1}{2}$ S $\frac{1}{2}$ S	69	
Cape Sweet Noze to Cape Candnose	E $\frac{1}{2}$ S	84	
Cape Sweet Noze to the SE Part of the 4 Islands	SE	33	
Do. Islands to Cape Orlogones	S $\frac{1}{2}$ E $\frac{1}{2}$ E	36	
Cape Orlogones to the SW Part of the 3 Islands	SW $\frac{1}{2}$ S	18	
Do. Island to Crofs Island	SW $\frac{1}{2}$ S $\frac{1}{2}$ S	36	
Crofs Island to Cape Warfiga	SW $\frac{1}{2}$ S	87	
Cape Orlogones to Cape Cadnose	NE	66	
Cape Orlogones to Cape Barfo	SE	36	
Cape Orlogones to Cape Bona Fortuna	S	62	

From the NAZB to different Places in NORWAY, FINMARK, LAPLAND, MUSCOVY,  
and NOVA ZEMBLA.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Orlogones to the Island at the Entrance of the Mezeenche Gulph	S 6 E $\frac{1}{2}$ E	48	
Cape Orlogones to Catnose or Blue Point	NNE $\frac{1}{2}$ E	120	
Cape Orlogones to Cape Donega	SW $\frac{1}{2}$ S	202	
Cape Orlogones to Kovesfra Island	SW $\frac{1}{2}$ S	200	
Cross Island to Cape Donega	SW $\frac{1}{2}$ W	141	0 0
Catnose to Cape Donega	SSW	60	
Catnose to the Entrance of Duina or Archangel River	S 6 W $\frac{1}{4}$ W	45	
Cape Donega to Point Orloftna Wolock	S 6 W & SSW	27	
Cape Donega to Anger Island	W	30	
Orloftna Wolock to Kifnimskoy	SSW & S 6 W	12	
Kifnimskoy to Lamas Point	SE & SE $\frac{1}{2}$ S	21	
Lamas Point to the Monastery Island	SE $\frac{1}{2}$ S & SE	45	
Monastery Island to the Entrance of Onega River	SE	6	
Cape Candenos to Colgoyen Isle	E $\frac{1}{2}$ N	64	
Cape Candenos to Muritz Isle	E $\frac{1}{2}$ N	279	
Cape Candenos to the Entrance of the Straits of Nascow, or Waygats Straits	E $\frac{1}{2}$ N	309	
Cape Candenos to Meelhaven	ENE	288	
Cape Candenos to Black Island	NE $\frac{1}{2}$ E	302	
Cape Candenos to Stats Point	NE	372	
Cape Candenos to Admiralty Island	NE $\frac{1}{2}$ N	459	

From USHANT to the PENMARKS, and from thence to different Places in the BAY of BISCAY to CAPE FINISTERRE.

From <b>U</b> SHANT to the Isle of Saints	S 6 E	27	23 30
Isle of Saints to the Penmarks	SE $\frac{1}{2}$ S	40	
Penmarks to the Isles de Glenan	SE $\frac{1}{2}$ E	14	
Penmarks to Isle de Croix	SE $\frac{1}{2}$ E	42	



From USHANT to the PENMARKS, and from thence to different Places in the BAY  
of BISCAY to CAPE FINISTERRE.

From		Course by the Compass.	Distance in Miles	Variation N. Westerly.	
				Deg.	Min.
From	Penmarks to the North-end of Belleisle	SE	58		
	Penmarks to the SW Part of Belleisle	SE $\frac{1}{2}$ S	63		
	Penmarks to the Isle of Houat	SE $\frac{1}{4}$ E	69		
	Penmarks to the Isle of Hédie	SE $\frac{1}{4}$ E	76		
	Penmarks to the Isle de Dieu	SE $\frac{1}{2}$ S	112		
	Penmarks to the Westernmost Parts of les Branches Vertes	SSE $\frac{1}{4}$ E	129		
	Penmarks to the SE Part of Roche Bonne	SSE $\frac{1}{2}$ E	134		
	Penmarks to the North-end of the Isle of Re	SE $\frac{1}{4}$ S	157		
	Penmarks to the SW Part of Oleron Island	SSE $\frac{1}{2}$ E	189		
	Penmarks to Point de la Coubre, the Entrance of Bourdeaux River	SSE $\frac{1}{4}$ E	196		
	Penmarks to Cape Ferret	S $\frac{1}{2}$ E $\frac{1}{4}$ E	228		
	Penmarks to the Entrance of Bayonne River	S $\frac{1}{2}$ E	288		
	Penmarks to Cape de Figuier	S $\frac{1}{2}$ E	289		
	Penmarks to Cape Machicaco	S $\frac{1}{4}$ W	255		
	Penmarks to Cape St. Andero	SW $\frac{1}{2}$ W	256	21	0
	Penmarks to Cape Pinas	SW $\frac{1}{4}$ S	250		
	Penmarks to Cape Ortegal	SW $\frac{1}{2}$ W	276		
	Penmarks to Cape Prior	SW $\frac{1}{2}$ W	303		
	Penmarks to the Isle de Sizarga	SW $\frac{1}{2}$ W $\frac{1}{4}$ W	330		
	Penmarks to Cape Coriane	SW $\frac{1}{2}$ W $\frac{1}{2}$ W	360		
	Cape Coriane to Cape Finisterre	SW $\frac{1}{4}$ W	14		

From the PENMARKS, along the Coast of FRANCE, in the BAY of BISCAY, to CAPE FINISTERRE.

From	PENMARKS to the Isles of Glenan	SE $\frac{1}{4}$ E	14	21	0
	Isles of Glenan to the Isle de Croix	SE $\frac{1}{2}$ E $\frac{1}{4}$ E	27		
	Isle de Croix to the North-end of Belleisle	SSE $\frac{1}{4}$ E	16		
	North-end of Belleisle to the North-end of Houat Isle	E $\frac{1}{2}$ S $\frac{1}{4}$ S	9		

From the PENMARKS, along the Coast of FRANCE, in the BAY of BISCAY, to  
CAPE FINISTERRE.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From North-end of Belleisle to the Shole de Gran	SE $\frac{1}{4}$ E	9	
North-end of Belleisle to the North-end of Hedio Isle	SE $\frac{1}{2}$ E	13	
South-West Part of Belleisle to the West Part of the Isle de Dieu	SSE $\frac{1}{2}$ E	51	
West Part of the Isle de Dieu to the West Part of les Branches Vertes	SW $\frac{1}{2}$ S	27	20 30
West Part of the Isle de Dieu to the East Part of Roche Bonne	S $\frac{1}{2}$ E	29	
East Part of Roche Bonne to the North Point of the Isle of Re	E $\frac{1}{2}$ S $\frac{1}{2}$ S	31	
North Point of Re to the North Point of Oleron Island	SSE $\frac{1}{2}$ E	13	
West Part of Oleron to Cape Ferret	SW $\frac{1}{2}$ W	76	
Cape Ferret to Bayonne River	SSW $\frac{1}{2}$ W	72	
Bayonne River to Cape de Figuier	W $\frac{1}{2}$ S	16	
Cape de Figuier to Cape Machicaco	NW $\frac{1}{2}$ W	74	
Cape Machicaco to Cape Andero	W $\frac{1}{2}$ N	33	
Cape Machicaco to Cape Pinas	NW $\frac{1}{2}$ W	126	
Cape Pinas to Cape Ortegual	NW $\frac{1}{2}$ W	81	
Cape Ortegual to Cape Prior	W $\frac{1}{2}$ N & W $\frac{1}{2}$ S	30	
Cape Prior to Cape Ferrol	SW $\frac{1}{2}$ W	7	
Cape Ferrol to Isle Sizarga	W $\frac{1}{2}$ S	24	
Isle Sizarga to Cape Villane	W $\frac{1}{2}$ S	27	
Cape Villane to Cape Coriane	SW $\frac{1}{2}$ S	10	
Cape Coriane to Cape Finisterre	SW $\frac{1}{2}$ W	14	

From CAPE FINISTERRE, towards the MEDITERRANEAN, to CAPE SPARTEL.

From CAPE Finisterre to the Isle Salure	S $\frac{1}{2}$ E	33	17 30
Cape Finisterre to Rock Philip	S	36	
Cape Finisterre to Mount Gabella	SE $\frac{1}{2}$ E	42	
Cape Finisterre to Isle Blidenes	SE $\frac{1}{2}$ E	52	



## From CAPE FINISTERRE, towards the MEDITERRANEAN, to CAPE SPARTEL.

						Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Finisterre to Isle de Bagonne	—	—	—	—	—	S $\frac{1}{2}$ E	65	
Cape Finisterre to le Sons off Port-à-port	—	—	—	—	—	S $\frac{1}{2}$ W	132	
Cape Finisterre to Cape Montego	—	—	—	—	—	S $\frac{1}{2}$ W	180	
Cape Finisterre to the Berlingas	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	195	
Berlingas to Cape de la Roque	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	51	
Cape de la Roque to Cape Spichel	—	—	—	—	—	S $\frac{1}{2}$ E $\frac{1}{2}$ E	33	
Cape de la Roque to Cape St. Vincent	—	—	—	—	—	S $\frac{1}{2}$ W	132	
Cape Spichel to Cape St. Vincent	—	—	—	—	—	S $\frac{1}{2}$ W $\frac{1}{2}$ W	102	
Cape St. Vincent to Cape St. Maria	—	—	—	—	—	E $\frac{1}{2}$ S $\frac{1}{2}$ S	56	
Cape St. Vincent to Cape Trifalgar	—	—	—	—	—	SE $\frac{1}{2}$ E $\frac{1}{2}$ E	180	
Cape St. Maria to Cape Trifalgar	—	—	—	—	—	SE $\frac{1}{2}$ E	129	
Cape St. Vincent to Cape Spatel	—	—	—	—	—	SE $\frac{1}{2}$ E	186	

## From CAPE TRIFALGAR, up the MEDITERRANEAN, on the CHRISTIAN SHORE, to CAPE DE PALLE.

From CAPE Trifalgar to Cape Marinal	—	—	—	—	—	S $\frac{1}{2}$ E $\frac{1}{2}$ E	10	14	4
Cape Trifalgar to the Westernmost Rocks of Tarife Island	—	—	—	—	—	SE $\frac{1}{2}$ S	16		
Tarife Island to Europe Point	—	—	—	—	—	E $\frac{1}{2}$ N	17		
Europe Point to Cape Molinero	—	—	—	—	—	E $\frac{1}{2}$ N $\frac{1}{2}$ N	51		
Europe Point to Velez-Malaga	—	—	—	—	—	NE $\frac{1}{2}$ E $\frac{1}{2}$ E	68		
Europe Point to Cape Sacraftil	—	—	—	—	—	E $\frac{1}{2}$ N	96		
Europe Point to De Berge	—	—	—	—	—	E $\frac{1}{2}$ N	118		
Europe Point to the West Part of the Island Alboran	—	—	—	—	—	E $\frac{1}{2}$ S $\frac{1}{2}$ S	112		
Europe Point to Cape de Gat	—	—	—	—	—	E	154		
Cape de Gat to Calla Figuiere	—	—	—	—	—	E $\frac{1}{2}$ N	8		
Calla Figuiere to Lacarboniere	—	—	—	—	—	NE $\frac{1}{2}$ E	11		
Lacarboniere to Cape Ropa	—	—	—	—	—	NE $\frac{1}{2}$ N	18		

## From CAPE DE GATTE to CAPE ST. MARTIN, and the adjacent Islands.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly Deg. Min.
From Cape de Gatte to Carthage	NE $\frac{1}{2}$ E	87	
Cape de Gatte to Cape de Palle	ENE	105	
Cape de Gatte to the Island Formigues	E $\frac{1}{2}$ N	110	
Cape de Palle to the Island Grosse	NNE $\frac{1}{2}$ E	8	
Cape de Palle to the East-end of the Island Plane	NE $\frac{1}{2}$ N	35	
Cape de Palle to Cape St. Paul	NE $\frac{1}{2}$ N	37	
Cape de Palle to Alicant Road	NE $\frac{1}{2}$ N	44	
Cape de Palle to Monte Benidorme	NE $\frac{1}{2}$ N	57	14 4
Cape de Palle to Cape St. Martin	NE $\frac{1}{2}$ N	75	
Cape de Palle to the SW Part of the Island Fromentiere	ENE	96	
Cape de Palle to the SE Part of Fromentiere	E $\frac{1}{2}$ N	110	
Cape de Palle to the Isle Belgran, the West Part of Ivica	NE $\frac{1}{2}$ E	101	

## From CAPE ST. MARTIN, along the CHRISTIAN SHORE, to MONT JOUY.

From CAPE St. Martin to the SW End of Fromentiere	SE $\frac{1}{2}$ E	43	14 4
Cape St. Martin to the Isle Belgran	E $\frac{1}{2}$ N	35	
Cape St. Martin to Cape St. Antoine	N $\frac{1}{2}$ W	9	
Cape St. Martin to Cape Coulibre	N $\frac{1}{2}$ W	39	
Cape St. Martin to Cape de Oropes	N $\frac{1}{2}$ E	8	
Cape St. Martin to Peniscola	N $\frac{1}{2}$ E	99	
Cape St. Martin to Mont Coulombret	NE $\frac{1}{2}$ N	76	
Cape St. Martin to the Island Dragonere, the West End of Majorca	E $\frac{1}{2}$ N	110	
Cape St. Martin to Point de Salo	NE $\frac{1}{2}$ N	144	
Cape St. Martin to Mont Jouy	NE $\frac{1}{2}$ E	174	
Mont Jouy to Cape Bajoli, the NW Part of Minorca	SE $\frac{1}{2}$ S	94	14 4
Cape St. Martin to Cape Begu	NE $\frac{1}{2}$ E	231	



## From CAPE BEGU, along the CHRISTIAN SHORE, to PORT VENERE.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Begu to Cape de Crèaux	NNE $\frac{1}{2}$ E	28	14 4
Cape de Crèaux to Cette	NNE	82	
Cape Begu to Bouche du Rhone	NE	72	
Cape Begu to Cape Courane	NE $\frac{1}{2}$ E	112	
Cape Courane to Point Riche	E	2	
Point Riche to Cape Mejan	NE $\frac{1}{2}$ E $\frac{1}{2}$ E	13	
Cape Mejan to Marseilles	NE $\frac{1}{2}$ N	14	
Cape Mejan to the South Part of Isle Pomegue	S $\frac{1}{2}$ E	10	
Cape Mejan to the NE End of the Island Ratineau	SE $\frac{1}{2}$ S $\frac{1}{2}$ S	11	
Cape Mejan to Croisette or Tiboulon	S $\frac{1}{2}$ E	17	
Tiboulon to Isle de Riou	S $\frac{1}{2}$ E $\frac{1}{2}$ E	7	
Isle de Riou to les Rucous	SE $\frac{1}{2}$ S	20	
Isle de Riou to Cape Sicie	E $\frac{1}{2}$ S	9	
Cape Sicie to Isle Porquerolle	ESE	27	
Isle Porquerolle to the East Part of Isle de Levant	E $\frac{1}{2}$ S	23	
Isle de Levant to Cape Taillar	NE $\frac{1}{2}$ N	10	
Cape Taillar to Cape Roux	NE $\frac{1}{2}$ E	19	
Cape Taillar to Villefranche	NE $\frac{1}{2}$ E	45	
Cape Taillar to Cape del Melle	E $\frac{1}{2}$ N $\frac{1}{2}$ N	93	14 4
Cape Taillar to Cape Corce, the North End of the Island of Corsica	E $\frac{1}{2}$ S $\frac{1}{2}$ S	130	11 15
Cape del Melle to Cape Corce	SE $\frac{1}{2}$ S $\frac{1}{2}$ S	80	
Cape del Melle to Isle Cabrera, North End	SE $\frac{1}{2}$ E	89	
Cape del Melle to Isle Gourgone, North End	SE $\frac{1}{2}$ E $\frac{1}{2}$ E	78	
Cape del Melle to Cape de Noli	NE	20	
Cape del Melle to Genoa	NE $\frac{1}{2}$ E $\frac{1}{2}$ E	46	
Cape del Melle to Mont Porta Fin	E $\frac{1}{2}$ N	54	
Cape del Melle to Port Venerere	E $\frac{1}{2}$ S	72	

From CAPE DEL MELLE, along the CHRISTIAN SHORE, to the MALORE off LEGHORN.					Course by the Compass.	Distance in Miles.	Variation N. Westerly Deg. Min.
From Cape del Melle to the Malore, or Leghorn Road	—	—	—	—	ESE	94	11 15
Cape de Noli to Mont Porta Fin	—	—	—	—	E $\frac{1}{2}$ S	39	
Cape de Noli to Port Venere	—	—	—	—	E $\frac{1}{2}$ S	62	
Cape de Noli to the Malore	—	—	—	—	ESE	93	
From LEGHORN, along the Coast of ITALY, and the Islands adjacent, to the Island ISOLE.							
From LEGHORN to Geurgone	—	—	—	—	W	22	11 15
Leghorn to the Island Cabrera	—	—	—	—	SW	32	
Leghorn to Porto Ferraro in the Island of Elbe	—	—	—	—	SW	45	
Leghorn in a Fair-way through the Channel of Piombin between the Islands Elbe and Palmaria	—	—	—	—	S		
East Part of Elbe to Mount Argentat	—	—	—	—	SE $\frac{1}{2}$ S	40	
Mount Argentat Isle to Mount Christa	—	—	—	—	W $\frac{1}{2}$ N	45	
Mount Argentat to Isle Jolly	—	—	—	—	W $\frac{1}{4}$ N	18	
Mount Argentat to Isle Januti	—	—	—	—	SW	16	
Mount Argentat to Civita Vecchia	—	—	—	—	SE	30	
Mount Argentat to Capé Dancia	—	—	—	—	SE $\frac{1}{2}$ S	83	
Mount Argentat to Monte Cercella	—	—	—	—	SE $\frac{1}{2}$ S	109	
Mount Argentat to the Isle Palmaria	—	—	—	—	SE $\frac{1}{2}$ S	116	
Island Palmaria to the Island de Ponce	—	—	—	—	SE $\frac{1}{2}$ E	7	
Isle de Ponce to the South Part of the Island of Iste, the Entrance of the Gulph of Naples	—	—	—	—	SE $\frac{1}{2}$ E $\frac{1}{4}$ E	45	
Monte Cercella to the Island Palmaria	—	—	—	—	SW	21	
Monte Cercella to the Island Senone	—	—	—	—	S	15	
Monte Cercella to the Island Mal de Ventre	—	—	—	—	SSE $\frac{1}{4}$ E	34	
Monte Cercella to the Island Iste	—	—	—	—	SE $\frac{1}{2}$ S	49	



From the Island Iscla, along the Coast of CALABRIA, SICILY, and GULPH of VENICE, to SINOGOGA.						Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Island Iscla to the Island Cabrita	_____	_____	_____	_____	_____	SE $\frac{1}{2}$ S	15	11 15
Island Iscla to the Island Maritimo, West End of Sicily	_____	_____	_____	_____	_____	SW $\frac{1}{2}$ S	180	
Iscla to the Island Ustica	_____	_____	_____	_____	_____	SSW	120	
Iscla to Alicar Island	_____	_____	_____	_____	_____	S $\frac{1}{2}$ W	129	
Iscla to Sallne Island	_____	_____	_____	_____	_____	S $\frac{1}{2}$ E $\frac{1}{2}$ E	122	
Iscla to Stromboli Island	_____	_____	_____	_____	_____	SSE $\frac{1}{2}$ E	120	11 15
Stromboli to Tour de Par, the NE Point of the Island of Sicily	_____	_____	_____	_____	_____	SSE $\frac{1}{2}$ E	51	
In a Fair-way through the Far of Messina, from the NE Point of Sicily to Cape de Larmo	_____	_____	_____	_____	_____	SSE	24	
From Cape de Larmo to Cape Spartivento	_____	_____	_____	_____	_____	E $\frac{1}{2}$ S	25	
Cape Spartivento to Cape Stillo	_____	_____	_____	_____	_____	NE	36	
Cape Spartivento to Cape delle Colonne the West Part of the Gulph Tranto	_____	_____	_____	_____	_____	NE $\frac{1}{2}$ E	84	
Cape delle Colonne to Cape St. Marie, the East Part of the Gulph Tranto	_____	_____	_____	_____	_____	NE $\frac{1}{2}$ E	72	
Cape St. Marie to the SE Part of the Island Corfu	_____	_____	_____	_____	_____	SE $\frac{1}{2}$ E	69	
Cape St. Marie to the West End of the Island Pachsu	_____	_____	_____	_____	_____	SE	69	
Cape St. Marie to the West End of Cephalonia	_____	_____	_____	_____	_____	SE $\frac{1}{2}$ S $\frac{1}{2}$ S	123	
Cape St. Marie to the South Point of Zante	_____	_____	_____	_____	_____	SSE $\frac{1}{2}$ E	171	
Cape St. Marie to Cape d'Otranto, the Entrance of the Adriatic or Gulph of Venice	_____	_____	_____	_____	_____	NNE $\frac{1}{2}$ E	28	
Cape d'Otranto to Brundisi	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ N	39	
Brundisi to Monopoli	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ W	33	
Brundisi to Cape Vestice	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ W	93	
Cape Vestice to the Island Gimnasy	_____	_____	_____	_____	_____	NNW $\frac{1}{2}$ W	27	
Cape Vestice to the Island of St. Maria Trinity	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ N	33	
Cape Vestice to the Island Pelagosa	_____	_____	_____	_____	_____	N $\frac{1}{2}$ E	39	
St. Maria Trinity to Fortore	_____	_____	_____	_____	_____	SSW	15	
Cape Vestice to Ortona	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ W	78	
Ortona to Ancona	_____	_____	_____	_____	_____	NW $\frac{1}{2}$ N	90	
Ancona to Sinogoga	_____	_____	_____	_____	_____	WNW	24	

## From ANCONA, along the DALMATIA Shore, to ANTINARI.

						Course by the	Distance	Variation
						Compass.	in Miles.	N. Westerly.
								Deg. Min.
From Ancona to Ravenna	—	—	—	—	—	NW & NW $\frac{1}{2}$ W	63	
Ancona to Rimano	—	—	—	—	—	NW $\frac{1}{4}$ W	89	
Rimano to Vollano	—	—	—	—	—	N $\frac{1}{2}$ W	51	
Vollano to the River Gora	—	—	—	—	—	NNE	21	
Vollano to the Entrance of Venice	—	—	—	—	—	NNE	51	
Ancona to the Entrance of Venice	—	—	—	—	—	N $\frac{1}{2}$ W	159	
The Entrance of Venice to Trieste	—	—	—	—	—	E $\frac{1}{2}$ S	54	
The Entrance of Venice to Rovigno in Istria	—	—	—	—	—	SE $\frac{1}{2}$ E	75	11 15
Rovigno to De Polmontoren	—	—	—	—	—	SE $\frac{1}{2}$ S	16	
Polmontoren to a Shoal, where is but 8 or 9 Feet Water	—	—	—	—	—	SE $\frac{1}{2}$ S	2	
Cape Polla to the NW End of Isola Longa	—	—	—	—	—	SE $\frac{1}{4}$ S	66	
Polmontoren to the Island Sanfigo, at the S End of Offero	—	—	—	—	—	SE $\frac{1}{2}$ S	15	
Sanfigo to the Island St. Pedro de Nino	—	—	—	—	—	E $\frac{1}{2}$ S	9	
Isola Longa, NW End to the SE	—	—	—	—	—	SE $\frac{1}{2}$ S	30	
Isola Longa to Cape Celso	—	—	—	—	—	SE $\frac{1}{2}$ S	30	
Isola Longa to the Island or Rock Pomo	—	—	—	—	—	S $\frac{1}{2}$ E	57	
Pomo to the Entrance of Venice	—	—	—	—	—	NW $\frac{1}{2}$ N	225	
Pomo to the Island Pelagofa	—	—	—	—	—	SE $\frac{1}{2}$ E	44	
Pomo to the Island Agofa	—	—	—	—	—	SE $\frac{1}{2}$ S	42	
* * Between Rovigno and Perenfo (two Miles from the Shore) lies a Parcel of Rocks: they are to the Westward of Rovigno, and must be carefully avoided.								
Agofa to Pelagofa	—	—	—	—	—	SW $\frac{1}{2}$ W $\frac{1}{2}$	25	
Agofa to the Island Meleda	—	—	—	—	—	ESE	33	
Meleda to Ragusa	—	—	—	—	—	E $\frac{1}{2}$ S	18	
Agofa to Cape Catarro	—	—	—	—	—	ESE	74	
Agofa to Budoa	—	—	—	—	—	SE $\frac{1}{2}$ E $\frac{1}{4}$ E	87	
Agofa to Antinari	—	—	—	—	—	SE $\frac{1}{2}$ E $\frac{1}{4}$ E	100	11 15



From AGOSTA, along the DALMATIA Shore, to the Island SAPIENSA, on the  
MOREA.

	Course by the Compass.	Distance in Miles.	Variation N. West. or Deg. Min.
From AGOSTA to the Entrance of the Gulph Lodrin	SE $\frac{1}{2}$ E	120	11 15
AGOSTA to Cape Lengua	SE $\frac{1}{4}$ S	163	
Pelagosa to Cape Lengua	SE $\frac{1}{4}$ E	165	
Pelagosa to Cape Otranto	SE $\frac{1}{2}$ S	157	
Cape Otranto to Cape Lengua	ENE	39	
Cape Lengua to the Island Fenu	NNE	36	
Cape Lengua to the Island Meleda	N $\frac{1}{2}$ E	38	
Cape Lengua to the North End of Corfu Island	SSE	44	
Cape Otranto to the West End of the Island Pachfu	SSE $\frac{1}{4}$ E	84	
Pachfu to Cape St. Sidaro, the Westernmost Point of Cephalonia	S $\frac{1}{2}$ E	54	
Cephalonia to Cape del Gard, the S. most Point of Zante	SSE	48	
Cape del Gard to the Island Straffadia	S $\frac{1}{2}$ E	18	
Cape Toro, the SE Point of Zante, to the Island Straffadia	S $\frac{1}{2}$ W	20	
Cape Toro to the Island Prodono	S $\frac{1}{2}$ E	38	
Cape Toro to Cape Sapiensa	S $\frac{1}{4}$ E	55	
The Island Straffadia to Prodono	SE $\frac{1}{2}$ S	19	
Straffadia to Cape Sapiensa	SSE $\frac{1}{4}$ E	35	
Cape Sapiensa to the Island Sapiensa	S $\frac{1}{2}$ W	6	

From CAPE SAPIENSA, on the Coast of the MOREA, to the Point whereon the DARDANELLE Castle stands.

From CAPE Sapiensa to Modon	E $\frac{1}{2}$ S	6	11 15
CAPE Sapiensa to Cape Matapan	SE $\frac{1}{2}$ E	51	
Cape Matapan to the Island Scardi, lying NW $\frac{1}{2}$ N, eight Miles from Cape Buisa, the Westernmost Part of the Island of Candia	NW $\frac{1}{2}$ N	82	
Scardi to Cape Spada, the Northernmost Point of Candia	E $\frac{1}{2}$ N	26	
Cape Spada to the Island Serigote	W $\frac{1}{2}$ N	29	

## From Cape SPADA to the North-East Part of the Island STANTIO.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Spada to the Island Ananes	NE $\frac{1}{2}$ N	53	11 15
Cape Spada to Milo	NE $\frac{1}{4}$ N	66	
Cape Spada to Antemilo	NE $\frac{1}{2}$ N	72	
Cape Spada to the Island Falconer	NNE	73	
Falconer to Cape Huno, or Cape Nore, the SE Point of Negroponte, through be- tween the Islands Firmin and Zea	NE $\frac{1}{2}$ E	8	
Cape Nore to the SE Part of the Island Lemnos	NE $\frac{1}{2}$ N	126	
South-East Part of Lemnos to the North East	NE $\frac{1}{4}$ E	13	
The North-East Point of Lemnos to the Entrance of the Dardanelle Straits	E	33	
The Entrance of the Straits to the Point whereon the Dardanelle Castle stands on the Thrace Side	E $\frac{1}{2}$ N	13	
The Dardanelle Castle to Gallipoli	SE $\frac{1}{2}$ S	30	11 15
Gallipoli to the Island Marmora	E $\frac{1}{2}$ N	34	
Marmora to Constantinople	E $\frac{1}{2}$ N	54	
The Entrance of the Straits to Castle del Mare Bianco, on the Side of Natolia	E $\frac{1}{2}$ N	17	
Castle del Mare Bianco to Cape Janefari	SW $\frac{1}{2}$ W	11	
Cape Janefari to Cape Bababora	SW	42	
Cape Bababora to the North End of the Island Sequiri	WSW	22	
The South End of the Island Sequiri to Cape Barbanole, or Cape Calaberno, which is the West Point that makes the Gulph of Smyrna	SE $\frac{1}{2}$ S	39	
Sequiri to Fogia Nova, the East Part of the Gulph	E $\frac{1}{2}$ S	42	
Cape Barbanole to the Rock Venetia, which lies from the SW Point of the Island Scio or Xio	SW $\frac{1}{2}$ W	45	
Venetica to Cape St. Dominique, the Westernmost Part of the Island of Samos	SE $\frac{1}{2}$ S	34	
Cape St. Dominique, through between the Islands, to the SE Point of the Island Calimno	SSE	39	
The Island Calimno to the NE Part of the Island Stantio	SE	18	



From the Island STANTIO to Cape ALBISANIA, the Northernmost Point of the Island  
of CYPRUS.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Stantio to Cape Grio	S 6 W $\frac{1}{2}$ W	19	11 15
Cape Grio to the East End of the Island Nisero	SW	13	
Nisero to the West End of the Island Stazida	S W $\frac{1}{2}$ W	27	
Stazida to Cape Solomon, the Easternmost Part of the Isle of Candia	S W $\frac{1}{2}$ S	51	
Cape Solomon to the Island Morena	N $\frac{1}{2}$ W	14	
The Island Morena to the Island Janitezari	N W $\frac{1}{2}$ W	11	
Janitezari to Point Spina Longa	W $\frac{1}{2}$ N	35	
Point Spina Longa to the SW Part of the Island Stantea	N W $\frac{1}{2}$ W	19	
Point Spina Longa to Cape Trefihio	W $\frac{1}{2}$ N $\frac{1}{2}$ N	30	
Point Spina Longa to Cape Sufa	W N W	38	
Cape Sufa to Cape Lalapada	W $\frac{1}{2}$ N	31	
Cape Sufa to Cape Mallacha	W $\frac{1}{2}$ N $\frac{1}{2}$ N	39	
Cape Mallacha to Cape Spada	W $\frac{1}{2}$ N	20	
Cape Spada to the Island Scardi	W $\frac{1}{2}$ S	26	
Island Scardi to the Island Fonestino	S $\frac{1}{2}$ E	15	
Fonestino to Cape St. John Baptista	S E $\frac{1}{2}$ S	4	
Cape St. John Baptista to the West End of the Island Gozo	S S E	18	
Gozo to the Island Cabrera	E	42	
Gozo to the Island Couderon	E $\frac{1}{2}$ S	75	11 15
Couderon to Christiana Island	E $\frac{1}{2}$ S	31	
Christiana Island to Cape Solomon	N E $\frac{1}{2}$ E $\frac{1}{2}$ E	27	
Cape Solomon to Cape Purnisa, the SW Point of the Island Scarpanto	N E $\frac{1}{2}$ E	42	
Cape Solomon to the Island St. Catharine, lying off the South End of the Island Rhodes	E $\frac{1}{2}$ N $\frac{1}{2}$ N	87	
Cape Solomon to Castle Rosa Island	E $\frac{1}{2}$ N	168	
From Castle Rosa SSE, Distance 45 Miles, lies a sunken Rock, and from Cape Solomon	E $\frac{1}{2}$ S	180	
Cape Solomon to Cape Baffa, the West Point of Cyprus	E $\frac{1}{2}$ S $\frac{1}{2}$ S	273	
Cape Baffa to Cape Albifania, the Northernmost Point of Cyprus	N	21	

## From Cape SOLOMON to Cape BRULE, &amp;c.

	Course by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Cape Solomon to Antiochia	E $\frac{1}{2}$ N	276	11 15
Cape Solomon to Cape Sessin, the Southernmost Point on the Coast of Caramania	E $\frac{1}{4}$ N	294	
Cape Sessin to Point Padrola	E $\frac{1}{2}$ S	45	
Cape Padrola to Cape Curco	E $\frac{1}{2}$ S	39	
Cape Curco to Cape St. Andrea, the East Point of the Island of Cyprus	S $\frac{1}{2}$ E	57	
Cape Curco to the Northernmost Point of the Entrance of the Bay of Alexandretta or Scanderoon Bay	E $\frac{1}{4}$ S	60	
Cape Curco to Cape de Porcos, the South Point of the Bay of Alexandretta	ESE	87	
Cape Porcos to Cape St. Andrea, the East Part of Cyprus	WSW	62	
Cape Porcos to Cape Grega in Cyprus	SW $\frac{1}{4}$ S	114	
Cape Porcos to Point de Vallo	S $\frac{1}{2}$ E	16	
Cape Porcos to Tripoli	SW $\frac{1}{4}$ W	90	
Cape Porcos to Cape Pondico	SSW	94	
Cape Pondico to Cape de Gata, the Southernmost Point of Cyprus	W $\frac{1}{2}$ N	120	
Cape Pondico to Sidon Saita	SSW $\frac{1}{4}$ W	66	
Cape Pondico to Cape Blanco	SW $\frac{1}{2}$ S $\frac{1}{2}$ S	90	
Cape Pondico to Cape Carmel	SW $\frac{1}{2}$ S	105	
Cape Carmel to Jaffa	S $\frac{1}{2}$ W $\frac{1}{4}$ W	33	
Cape Carmel to Cape Gallo	SW $\frac{1}{2}$ W $\frac{1}{4}$ W	141	
Cape Carmel to Daimaitia, the Easternmost Branch of the River Nile	W $\frac{1}{2}$ S $\frac{1}{4}$ S	192	
Cape Carmel to Cape Brule	W $\frac{1}{2}$ S	210	
<i>N. B. E <math>\frac{1}{2}</math> S <math>\frac{1}{4}</math> S from Cape de Gata lies a dangerous Shoal, distance 9 Leagues.</i>			
Cape Brule to Rosetti	W $\frac{1}{2}$ S $\frac{1}{4}$ S	18	11 15
Rosetti to Alexandria	SW	33	
Alexandria to Cape Coroberia	W $\frac{1}{2}$ N	51	
Alexandria to Cape Darafo	N $\frac{1}{2}$ W	78	
Alexandria to Port Solyman	NW $\frac{1}{2}$ W $\frac{1}{4}$ W	192	



## From Port SOLYMAN, &amp;c. to the Entrance of PORT DE BONNE.

						Courfe by the Compass.	Distance in Miles.	Variation N. Westerly. Deg. Min.
From Port Solyman to Cape Razatin	—	—	—	—	—	NW $\frac{1}{2}$ W	90	11 15
Cape Razatin to the Island Ananea	—	—	—	—	—	NW $\frac{1}{2}$ W	96	
Ananea to Cape Razat	—	—	—	—	—	W $\frac{1}{2}$ N	30	
Cape Razat to Point Tolemetat	—	—	—	—	—	W $\frac{1}{2}$ S	36	
Cape Razat to Tejones	—	—	—	—	—	W $\frac{1}{2}$ N	76	
Cape Razat to Cape Mejurata	—	—	—	—	—	W $\frac{1}{2}$ N	288	
Cape Mejurata to Tripoli	—	—	—	—	—	NW $\frac{1}{2}$ W	120	
Cape Mejurata to Tripoli Vecchio	—	—	—	—	—	NW $\frac{1}{2}$ W	189	
Cape Mejurata to Cape Razalmobes	—	—	—	—	—	NW	222	
Cape Mejurata to the Far of Messine	—	—	—	—	—	N $\frac{1}{2}$ E	345	
Cape Mejurata to Cape Passaro, the SE Point of Sicily	—	—	—	—	—	N $\frac{1}{2}$ E	267	
Cape Mejurata to the East End of the Island Malta	—	—	—	—	—	N $\frac{1}{2}$ E	231	
Cape Mejurata to the West End of the Island Gozi	—	—	—	—	—	N $\frac{1}{2}$ W	249	
Cape Mejurata to Limoza	—	—	—	—	—	N $\frac{1}{2}$ W	255	
Cape Mejurata to Lampidoza	—	—	—	—	—	NNW	247	
Cape Razalmobes to the East Part of the Island Cercani	—	—	—	—	—	NNE $\frac{1}{2}$ E	78	
Cercani to the Island Pantelerie	—	—	—	—	—	N $\frac{1}{2}$ E	76	
Pantelerie to Cape Bona	—	—	—	—	—	WNW $\frac{1}{2}$ N	39	
Cape Bona to the Island Maritimo	—	—	—	—	—	NNE $\frac{1}{2}$ E	52	
Maritimo in a Fair-way through the Channel of Malta	—	—	—	—	—	SE		
Cape Bona to the Island Zimbre	—	—	—	—	—	W $\frac{1}{2}$ N	18	
Cape Bona to Cape Houardia	—	—	—	—	—	WNW	45	
Cape Bona to Cape de Morabu	—	—	—	—	—	WNW $\frac{1}{2}$ N	78	
Cape de Morabu to Cape Negre	—	—	—	—	—	W $\frac{1}{2}$ N	15	
Cape Bona to the Island Galita	—	—	—	—	—	NW $\frac{1}{2}$ W	108	
Galita to the Island Taureau, the South End of Sardinia	—	—	—	—	—	NNW	84	
Cape Negre to the Entrance of Port de Bonne	—	—	—	—	—	W	64	

## From Cape NEGRE, &amp;c. to Cape DISPARTEL.

	Course by the Compass.	Distance in Miles.	Variation
			N. Westerly. Deg. min.
From Cape Negre to Cape de Houardia	W $\frac{1}{4}$ N	100	11 15
Cape Negre to Cape Bugaroni	W $\frac{1}{4}$ N	156	
Cape Negre to Cape Carbon	W $\frac{1}{4}$ N	222	
Cape Carbon to Cape Te Delle	W $\frac{1}{4}$ N	46	
Cape Te Delle to Cape Bingut	W $\frac{1}{2}$ S	34	
Cape Bingut to Alger	W $\frac{1}{2}$ S	35	
Cape Bingut to Cape Cassinne	W $\frac{1}{2}$ S	36	
Cape Te Delle to the Island Minorca	E $\frac{1}{2}$ N	150	
Cape Te Delle to the Island Cabrera, off the South End of Majorca	N $\frac{1}{2}$ W $\frac{1}{4}$ W	131	
Cape Cassinne to the Point of the Tour de Cachique	W	20	
Tour de Cachique to Cape Cercelli	W $\frac{1}{2}$ S	23	
Cape Cercelli to Cape de Tenes	W $\frac{1}{2}$ N	21	
Cape de Tenes to the East End of the Island Fromentiere	N $\frac{1}{2}$ E	118	
Cape de Tenes to Cape Dyvy	W $\frac{1}{2}$ S $\frac{1}{4}$ S	44	
Cape Dyvy to Cape Ferat	W $\frac{1}{2}$ S	43	
Cape Ferat to Cape de Palle, on the Christian Shore	N	100	
Cape Ferat to Cape Falcon	W $\frac{1}{2}$ N	28	
Cape Falcon to Cape de Houardia	SW $\frac{1}{2}$ W $\frac{1}{2}$ W	53	
Houardia to Cape de Honne	W $\frac{1}{2}$ S $\frac{1}{4}$ S	17	
Cape de Honne to Cape de Gatte	N $\frac{1}{4}$ W	82	
Cape de Honne to Cape de Tres Forcas	N $\frac{1}{4}$ W	59	
Cape de Tres Forcas to the Island Alboran	N $\frac{1}{2}$ E	25	
Cape de Tres Forcas to Ceuta	W $\frac{1}{2}$ N	114	
Cape de Tres Forcas to Ceuta Point	W $\frac{1}{2}$ N $\frac{1}{2}$ N	116	
Ceuta Point to Cape Dispartel	W $\frac{1}{4}$ N	31	



*Remarks, coming from the Southward into the Channel.*

**T**R Y for ground in time, and keep, if possible, in the latitude of 49 degrees North. Then, 66 leagues from the Lizard, you will have 90 fathoms water, with fine sand; but, in the latitude of Scilly, you will have 80 fathoms water, with coarse ground.

From latitude 49° 30' to 49° you will have from 90 to 85 fathoms, in coming towards the Channel in the fair-way.

Sand with black specks, like beaten pepper, from 85 to 65 fathoms water, denote the Channel to be fairly open; and the

same ground with 64 fathoms denotes Scilly to bear NE by N distant 14 leagues.

When you are in latitude 49° 30' North, and have 75 fathoms, steer E. by S. or E. S. E. till you are sure you are within Scilly, and then make the land, if you have an opportunity.

In latitude 49° 22' with 60 fathoms water, you are abreast of Scilly; and, in the same latitude, with 35 fathoms, you are abreast of the Lizard.

In running up Channel in the night, shoal not less than 40 fathoms, and you will run to the southward of the Eddystone.

## From LONDON to most of the principal Ports in GREAT-BRITAIN.

			Dist. in Miles by Water.				Dist. in Miles by Water.	
From	<b>L</b>	<b>ONDON to Ipswich</b>	— — —	99	From	London to Dover	— — —	106
		London to Yarmouth	— — —	138		London to Shoreham	— — —	174
		London to Lynn	— — —	211		London to Portsmouth	— — —	220
		London to Hull	— — —	243		London to Cowes in the Isle of Wight	— — —	228
		London to Scarborough	— — —	259		London to Weymouth	— — —	265
		London to Whitby	— — —	273		London to Topsham	— — —	303
		London to Stockton	— — —	307		London to Dartmouth	— — —	310
		London to Newcastle	— — —	321		London to Plymouth	— — —	347
		London to Berwick	— — —	373		London to Falmouth	— — —	380
		London to Leith	— — —			London to Penzance	— — —	410
		London to Glasgow	— — —	728		London to Bristol	— — —	594
		London to Stromness in the Orkneys	— — —	576		London to Milford-haven	— — —	514
		London to Lerwick in Shetland	— — —	638		London to Liverpool	— — —	698
		London to Margate	— — —	80		London to Whitehaven	— — —	710

## From LONDON to the different Ports in IRELAND.

			Dist. in Miles by Water.				Dist. in Miles by Water.
From	L	LONDON to Dublin	— — —	596	London to Galway	— — —	762
	L	London to Waterford	— — —	545	London to Belfast	— — —	682
		London to Cork	— — —	551	London to Londonderry	— — —	735
		London to Kinsale	— — —	561	London to the River Shannon	— — —	679
		London to Limeric	— — —	715			

## From LONDON to the different Ports in the East Part of FRANCE, FLANDERS, HOLLAND, NORWAY, SWEDEN, DENMARK, and up the BALTIC, to St. PETERSBURGH, &amp;c.

From	L	LONDON to Morlaix	— — —	393	From	London to Crockery	— — —	572
	L	London to St. Maloes	— — —	369		London to Christiana	— — —	638
		London to Jersey	— — —	317		London to Gottenburg	— — —	585
		London to Guernsey	— — —	302		London to Elfineur	— — —	665
		London to Cherbourg	— — —	255		London to Copenhagen	— — —	687
		London to Havre-de-grace	— — —	210		London to Stettin	— — —	733
		London to Dieppe	— — —	169		London to Colberg	— — —	827
		London to Boulogne	— — —	129		London to Dantzic	— — —	964
		London to Calais	— — —	123		London to Koningzburg	— — —	983
		London to Dunkirk	— — —	126		London to Memel	— — —	996
		London to Ostend	— — —	135		London to Riga	— — —	1150
		London to Flushing	— — —	149		London to Stockholm	— — —	1075
		London to Middleburgh	— — —	165		London to Revel	— — —	1177
		London to Rotterdam	— — —	238		London to Narva	— — —	1284
		London to Amsterdam	— — —	283		London to Wyburgh	— — —	1286
		London to Hamburg	— — —	404		London to St. Petersburg	— — —	1361
		London to Northbergen	— — —	598		London to Hacluit's Headland in Spits- bergen	— — —	1755
		London to Fleckery	— — —	496				



From LONDON to the different Ports in the East Part of FRANCE, FLANDERS, HOLLAND, NORWAY, SWEDEN, DENMARK, and up the BALTIC, to ST. PETERSBURGH, &c.

	Dist. in Miles by Water.		Dist. in Miles by Water.
From London to Newfoundland	2266	From London to Constantinople	3040
London to Barbadoes	3873	London to Cape de Verde Islands	2630
London to Madeira	1622	London to Cape of Good Hope	6590
London to Western Islands or Azores	1535	London to the East-Indies	10400
London to Lisbon	1130	London to the East Indies, <i>by Land</i> , }	4200
London to Gibraltar	1428	through Persia	
London to Naples	2387	London to Botany Bay, New Holland	12994

A NEW and CORRECT TIDE-TABLE, shewing the TIME of HIGH-WATER, at the NEW and FULL MOON: With a TABLE annexed, shewing the TIME of HIGH-WATER every Day, from the CHANGE to the FULL, and from the FULL to the CHANGE, of the MOON, for the Coasts of ENGLAND, IRELAND, SCOTLAND, and the Islands adjacent; LAPLAND, NORWAY, JUTLAND, HOLLAND, FLANDERS, FRANCE, PORTUGAL, SPAIN, MOROCCO, and the CANARIES: With easy RULES to find the EPACT, MOON'S AGE, and NEW MOONS.

	A.	Hours.	Min.
<b>A</b> T Aberdeen, N <sup>6</sup> E and S <sup>6</sup> W	—	—	45
At Alemouth, NE <sup>6</sup> N and SW <sup>6</sup> S	—	2	15
At Amsterdam, NE and SW	—	3	—
At the Isles of Arran, S <sup>6</sup> E and N <sup>6</sup> W	—	11	15
At Achill-head, at the Entrance of Archangel River, E and W	—	6	—
At Aaron Island, E <sup>6</sup> S and W <sup>6</sup> N	—	6	45
At Archangel, ESE and WNW	—	7	30
At Arklow, SE <sup>6</sup> E and NW <sup>6</sup> W	—	8	15
At the Island of Alderney, N and S	—	12	—
At Ameland and at Alborough, SSE and NNW	—	10	30

	Hours.	Min.
At the Point of Ayre in the Isle of Man, SSE and NNW	10	30
At Antwerp, E and W	6	
B.		
At Belleisle, NE and SW	3	
At North Bergen, and from thence to the Stadland, NNE and SSW	1	30
At Blythe, NE&N and SW&S	2	15
At Berwick and at the Briel, NE and SW	3	
Along the Coast of Biscay, at the Blasques, at Bantry, at Baltimore, at the Entrance of Bourdeaux River, and thence along the Coast to Ushant, ENE and WSW	4	30
At Bridlington and Bayonne, NE&E and SW&W	3	45
At the Isle of Bas, on the Coast of France, NE&E and SW&W	3	45
At Blakeney, on Barnstaple Bar, at Broadhaven, and at Bremen, E and W	6	
At Bridgewater and at Ballyshannon, E&S and W&N	6	45
At Bristol, ESE and WNW	7	30
At Barfey Isles, SE&E and NW&W	8	15
At Bella Castle, SE and NW	9	
At Cape Barfleur, ESE and WNW	7	30
At Beaumaris, at Beachy-head, and Borkham Island, SSE and NNW	10	30
At Badsey Cliff, at Belfast, and at Boulogne, S&E and N&W	11	15
At Beachy on the Shore, N and S	12	
At Beachy in the Offing, S&W and N&E	0	45
At Baltimore, in Ireland, ENE and WSW	4	30
At Bourdeaux NE and SW	3	
C.		
At Calais, at Carlisle, and at Cromartie, N and S	12	
At West Capel, N&E and S&W	0	45
At Chatham, and in the Offing between Dover and Calais, NNE and SSW	1	30
At Cadiz, at the Canaries, and at the Cocket, ENE and WSW	4	30
At the North Cape, NE and SW	3	



	Hours.	Min.
At Cape Clear, and at the Entrance of the English and St. George's Channels, ENE and WSW	4	30
At Camperdown, at Cape Cornwall, and at the Entrance of Cork Harbour, ENE and WSW	4	30
At the Sound of Canna, and in Cork Harbour, E6N and W6S	5	15
At Catnefs, at the Sound of Chante, and at Ilfordcombe, E and W	6	
At Cromer, E6S and W6N	6	45
At Canale, in Cardigan Bay, and at Chepstow, ESE and WNW	7	30
At the Entrance of the Irish Channel, SE6E and NW6W	8	15
At the Mull of Cantire, SE and NW	9	
At Caernarvon Bar, and at Cherburg, ESE and WNW	7	30
At the Calf of Man, in Carrickfergus Bay, at Chester Bar, at Conway, and Copeland Island, SSE and NNW	10	30
At Cowes, S6E and N6W	11	15
At the Caskets, SE6E and NW6W	8	15
D.		
At Deal, at Dover, and at Dunkirk, N and S	12	
In the Downs, and at Dundee, NNE and SSW	1	30
At Denbigh, NE6N and SW6S	2	15
At Dartmouth, E6S and W6N	6	45
At Drontheim, and along the Coast of Finmark, to the North Cape, NE6N and SW6S	2	15
At the Dorfes, NE and SW	3	
At Dort, NE and SW	3	
At Dungarvon, ENE and WSW	4	30
At Dunbagon-Head, E and W	6	
At St. David's-Head, at Dartmouth, and at Donegall, E6S and W6N	6	45
At the Dudgeon Light ESE and WNW	7	30
At Dublin, SE6S and NW6N	9	45
At Douglas, at Dunnose, and at Duncansby-Head, SSE and NNW	10	30
At Dieppe, at Drogheda, and at Dungenefs, S6E and N6W	11	15
E.		
At the First Buoy of the Elve, at Embden, and at Enkhufen, N and S	12	

	Hours.	Min.
At Egmout, ENE and WSW	—	—
At the Eddystone, E and W	—	—
At Exeter Bar, E $\delta$ S and W $\delta$ N	—	—
At Ensterrhull, ESE and WNW	—	—
Before the Eastern and Western Emes, SE and NW	—	—
At the Entrance of Embden River, SSE and NNW	—	—
F.		
On the Flats, and at the Forelands, SE $\delta$ S and NW $\delta$ N	—	—
On the Flanders Banks, and at Flushing, N $\delta$ E and S $\delta$ W	—	—
Along the Coast of Finmark, and from Cape Finisterre, to Cape St. Vincent, NE $\delta$ N and SW $\delta$ S	—	—
At Filey and Flamborough Head, ENE and WSW	—	—
At Falmouth and at Foy, E $\delta$ N and W $\delta$ S	—	—
At the Fly Gateway, E $\delta$ S and W $\delta$ N	—	—
In the Fly Road, ESE and WNW	—	—
At Fairhead, SE and NW	—	—
At Petland Frith and Fair Isle, SSE and NNW	—	—
G.		
In the Gore and Chamber, S $\delta$ E and N $\delta$ W	—	—
At the Galloper and at the Gabbard, N $\delta$ E and S $\delta$ W	—	—
At the Back of the Goodwin, at Gravesend, and at Goree Gateway, NNE and SSW	—	—
At Gibraltar, N and S	—	—
At Groin and the Coast of Galicia, NE and SW	—	—
At Galway and at Gresholm, E and W	—	—
At Granville, ESE and WNW	—	—
At Guernsey, NNE and SSW	—	—
At the Mull of Galway, S $\delta$ E and N $\delta$ W	—	—
H.		
At Helvoetsluys, NNE and SSW	—	—
At the Hook of Holland, NE and SW	—	—



	Hours.	Min.
At Hartlepool and Huntlyfoet, NE $\delta$ E and SW $\delta$ W	3	45
At Humber, E $\delta$ N and W $\delta$ S	5	15
At Holy-head, NNE and SSW	1	30
At Hamburgh, E and W	6	
At the Flat and Steep Holms, E $\delta$ S and W $\delta$ N	6	45
At Hasborough, ESE and WNW	7	30
On Hasborough Sand and Honfleur, SE and NW	9	
At Cape de la Hague, SE $\delta$ S and NW $\delta$ N	9	45
At Harwich, at Havre-de-grace, and at St. Helen's, S $\delta$ E and N $\delta$ W	11	15
Before Horn and Hampton Quay, N and S	12	
Under Holy Island, NNE and SSW	1	30
I. J.		
Along the Coast of Jutland, N and S	12	
On the West Coast of Ireland, NE and SW	3	
At St. Ives, E $\delta$ N and W $\delta$ S	5	15
In all the Havens on the South Coast of Ireland, E $\delta$ N and W $\delta$ S	5	15
At the SW End of Ila, and in the Sound of Ila, SE $\delta$ E and NW $\delta$ W	8	15
At Jersey, SE $\delta$ E and NW $\delta$ W	8	15
K.		
At Kelliers, NE and SW	3	
At Kinfale, E $\delta$ N and W $\delta$ S	5	15
At Killybegs and Kingroad, E $\delta$ S and W $\delta$ N	6	45
At Kickduyn in Holland, and at Kilduyn in Lapland, ESE and WNW	7	30
At Kildive, SE and NW	9	
At Kircudbright, S $\delta$ E and N $\delta$ W	11	15
At Kentish Knock, N and S	12	
L.		
At Lich, N and S	12	
At the Long-sand-head, N $\delta$ E and S $\delta$ W	0	45

	Hours.	Mia.
At Leith and Lerwick in Shetland, NNE and SSW	1	30
At Lisbon, NE½N and SW½S	2	15
At London, NE and SW	3	
At Lochdon, at the Longships, and at Loophead, ENE and WSW	4	30
At Lockshell, and at Lynn, E and W	6	
At Londonderry, E and W	6	
At the Butt of the Lewises and at Limeric, E½S and W½N	6	45
At Loughswilly, ESE and WNW	7	30
At Lochlairne and at Lowestoff on Shore, SE½S and NW½N	9	45
In Lowestoff Roads, SSE and NNW	10	30
At Lancaster, at Lymington, at Liverpool, and in the Offing between Lowestoff and Orfordness, S½E and N½W	11	15
At the Land's-end, ESE and WNW	7	30
At Lime, E½S and W½N	6	45
At the Lizard, ESE and WNW	7	30
At Lundy Isle, E½N and W½S	5	15
M.		
At Margate, N and S	12	
Along the Coast of Morocco, NE½N and SW½S	2	15
At the Maze, at Mazeland-fluice, and at Mizenhead, NE and SW	3	
At the Old Maze, NE½E and SW½W	3	45
At Mount's Bay, ENE and WSW	4	30
At the Sound of Mull, E½N and W½S	5	15
At Milford Haven and at Morlaix, E and W	6	
At St. Maloes and at Minehead, E½S and W½N	6	45
In St. Magnes Sound, SE½E and NW½W	8	15
In the Isle of Man, SE and NW	9	
N.		
At Newry, and at Newport in Flanders, N and S	12	
At the Nore, N½E and S½W	0	45



	Hours.	Min.
Before the River of Nantz, NE and SW	3	
At Newcastle, NE and SW	3	
Before St. Nicolas, EδS and WδN	6	45
At the Needles, NNW and SSE	10	30
All the Coast of Normandy and Picardy, SSE and NNW	10	30
At the Naze, SδE and NδW	11	15
O.		
At Ostend, N and S	12	
At Cape Ortegal, NE and SW	3	
At the Ormsheds and at the Orkneys, SSE and NNW	10	30
At Orfordness, SEδS and NWδN	9	45
P.		
At Peterhead, N and S	12	
At Porto Port, NE and SW	3	
On the Coast of Portugal, NEδE and SWδW	3	45
At Penzance, ENE and WSW	4	30
At Plymouth, E and W	6	
Before Podestimeck, EδS and WδN	6	45
At Portland, SEδE and NWδW	8	15
At Pool, SE and NW	9	
At Petland Frith and at Pillefowder, SSE and NNW	10	30
At Portsmouth, SδE and NδW	11	15
Q.		
At Queenborough, NNE and SSW	1	30
R.		
At Ramsgate, N and S	12	
At Rochester, NδE and SδW	0	45
At Ramkins, NNE and SSW	1	30
At Rouen, NEδN and SWδS	2	15

	Hours.	Min.
At Rotterdam and Rochelle, NE $\frac{1}{2}$ E and SW $\frac{1}{2}$ W	3	45
At Robinhood Bay and Rochefort, NE and SW	3	
At the Ramhead, E and W	6	
At the Rocheries or Ratlin Island, SE and NW	9	
At Ramfey, SSE and NNW	10	30
At the North and South Rocks, S $\frac{1}{2}$ E and N $\frac{1}{2}$ W	11	15
S.		
Through the Swin, at the Shipwash, at Southampton, at Smith's Knowle, at Sweetnose in Lapland, at the South Foreland, and at Sandwich, N and S	12	
At Sheerness and at the Stadland, NNE and SSW	1	30
At the Staples, NE $\frac{1}{2}$ N and SW $\frac{1}{2}$ S	2	15
At Sunderland, at Shields, and at the Shellocks, NE and SW	3	
Upon the Coast of Spain, and in Shetland, NE and SW	3	
At Scevelin and at Scilly, NE $\frac{1}{2}$ E and SW $\frac{1}{2}$ W	3	45
At Scarborough, at Stockton, and at the Entrance of the River Shannon, ENE and WSW	4	30
At the Spurn and at Slynehead, E $\frac{1}{2}$ N and W $\frac{1}{2}$ S	5	15
At Salecomb, at the Saltees, at the Smalls, at the Start, and at Swanfey, E and W	6	
At Stanway and at Sligo, E $\frac{1}{2}$ S and W $\frac{1}{2}$ N	6	45
Off the Start in the Channel, ESE and WNW	7	30
Within the Seyn, and before Shelburgh, and at the Seven Cliffs, SE and NW	9	
At the Skerries near Holyhead, SE $\frac{1}{2}$ S and NW $\frac{1}{2}$ N	9	45
At Southwold, at Stromeneys, at the South End of Shetland, and at Shoreham, SSE and NNW	10	30
T.		
At Tervere, N $\frac{1}{2}$ E and S $\frac{1}{2}$ W	0	45
At Tinmouth Bar, NE and SW	3	
At the Rocks of Terre, ENE and WSW	4	30
At the Buoys going into the Texel, E and W	6	
At Torbay, at Tory Island, at Cape de Telling, and at the Tusker Rock, E and W	6	
At Topsham, SE and NW	6	
X		



	Hours.	Min.
At the Texel Road, SEbE and NWbW	8	15
At Tergou, SEbS and NWbN	9	45
U. V.		
At Use and Villaine River, NE and SW	3	
Within Ufhant, NEbE and SWbW	3	45
Without Ufhant, in the Offing, ENE and WSW	4	30
Before Ureck, N and S	12	0
At Cape St. Vincent, and from Cape St. Vincent along the Coast to Cadiz, NEbN and SWbS	2	15
At St. Vallery, SbE and NbW	11	15
W.		
At the First Buoy of the Wefer, N and S	12	
At Winchelsea, NbE and SbW	0	45
At the Weilings and from the West End of the Wight, NNE and SSW	1	30
Before the Weilings, NEbN and SWbS	2	15
At Whitby, NE and SW	3	
At Woolwich, NEbN and SWbS	2	15
In the Sea of Wales and Severn, NNE and SSW	1	30
At Wells and at Waterford, E and W	6	
At Wexford, ESE and WNW	7	30
At Winterton, at Cape Wrath, and at Weymouth, SEbE and NWbW	8	15
At Wicklow, SE and NW	9	
At Whitehaven, at Woodbridge Bar, and in the Wallet, SbE and NbW	11	15
Y.		
At Youghall, ENE and WSW	4	30
Along the Yorkshire Coast in the Offing, E and W	6	
In Yarmouth Roads, SEbS and NWbN	9	45
At Yarmouth on the Isle of Wight, and at the Back of Yarmouth Banks, SSE and NNW	10	30
Z.		
In the Zyderzee, NNE and SSW	1	30
In the Zuric Sea, NE and SW	3	

*The following easy Rules, to find the Moon's Age and Time of New Moon, were communicated by Mr. JOHN ADAMS.*

To find the EPOCH.

ADD 11 every year, but throw away 30 whenever you can.

The Epoch for 1787 is 11; for 1788, is 22; for 1789, it is 3; for 1790, it is 14; for 1791, it is 25; for 1792, it is 6; &c.

An easy Method to find the MOON'S AGE.

Count the months from February, reckoning March 1, April 2, &c. to which add the Day of the Month, and Epoch; the sum is the Moon's age. But, when the sum exceeds 30, throw 30 away, if the month contains 31 days; but, when the month contains 30 days, throw away 29; viz. always 1 less than the days in the month.

N. B. The Epoch for any year begins with March, and continues to the end of February the year following.

EXAMPLES.

Required the Moon's Age, July 23, 1789.

July; from February 5 months

Days	23
Epoch	3
<hr/>	

31

Throw away 30, remains 1, the Moon's Age.

Required the Moon's Age, September 20, 1788.

September	7
Days	20
Epoch	22
<hr/>	

49

Throw away 29, remains 20, the Moon's Age.

Required the Moon's Age, February 13, 1789.

February	12
Days	13
Epoch	22
<hr/>	

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Throw away 27, remains 20, the Moon's Age.

If at any time the sum be 60, or exceed it, throw away 59.

An easy Method to find the DAY of NEW MOON.

To the number of months, reckoning March 1, April 2, &c. add the Epoch; and subtract that sum from the days in that month, less 1; the remainder is the day of the month the New Moon happens on.

EXAMPLES.

What day in July, 1788, will be New Moon?

July 5, Epoch 22, sum 27; which, subtracted from 30, gives the 3d, the day of New Moon.

What day in November, 1790, will be New Moon?

November 9, Epoch 14, sum 23; which, subtracted from 29, gives the 6th, the day of New Moon.

N. B. If at any time the sum exceed 30, subtract it from 59, gives the day of the month.



A TABLE, shewing the TIME of HIGH-WATER, on every Point of the Compass, every Day, from the New-Moon to the Full, and from the Full-Moon to the New and the Change.

N and S			N $\frac{1}{2}$ E and S $\frac{1}{2}$ W			NNE and SSW			NE $\frac{1}{4}$ N and SW $\frac{1}{4}$ S		
Moon's Age.			Moon's Age.			Moon's Age.			Moon's Age.		
1	2	3	1	2	3	1	2	3	1	2	3
1 and 16	12	48	1 and 16	1	33	1 and 16	2	18	1 and 16	3	3
2 17	1	36	2 17	2	21	2 17	3	6	2 17	3	51
3 18	2	24	3 18	3	9	3 18	3	54	3 18	4	39
4 19	3	12	4 19	3	57	4 19	4	42	4 19	5	27
5 20	4	0	5 20	4	45	5 20	5	30	5 20	6	15
6 21	4	48	6 21	5	33	6 21	6	18	6 21	7	3
7 22	5	36	7 22	6	21	7 22	7	6	7 22	7	51
8 23	0	24	8 23	7	9	8 23	7	54	8 23	8	39
9 24	7	12	9 24	7	57	9 24	8	42	9 24	9	27
10 25	8	0	10 25	8	45	10 25	9	30	10 25	10	15
11 26	8	48	11 26	9	33	11 26	10	18	11 26	11	3
12 27	9	36	12 27	10	21	12 27	11	6	12 27	11	51
13 28	10	24	13 28	11	9	13 28	11	54	13 28	12	39
14 29	11	12	14 29	11	57	14 29	12	42	14 29	1	27
15 30	12	0	15 30	12	45	15 30	1	30	15 30	2	15

*For the EXPLANATION of this Table see the next Page.*

# A Table of the Time of High-Water.

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NE and SW			NEbE and SWbW			ENE and WSW			EbN and WbS		
Moon's Age.			Moon's Age.			Moon's Age.			Moon's Age.		
1 and 16	3	48	1 and 16	4	33	1 and 16	5	18	1 and 16	6	3
2 17	4	36	2 17	5	21	2 17	6	6	2 17	6	51
3 18	5	24	3 18	6	9	3 18	6	54	3 18	7	39
4 19	6	12	4 19	6	57	4 19	7	42	4 19	8	27
5 20	7	0	5 20	7	45	5 20	8	30	5 20	9	15
6 21	7	48	6 21	8	33	6 21	9	18	6 21	10	3
7 22	8	36	7 22	9	21	7 22	10	6	7 22	10	51
8 23	9	24	8 23	10	9	8 23	10	54	8 23	11	39
9 24	10	12	9 24	10	57	9 24	11	42	9 24	12	27
10 25	11	0	10 25	11	45	10 25	12	30	10 25	1	15
11 26	11	48	11 26	12	33	11 26	1	18	11 26	2	3
12 27	12	36	12 27	1	21	12 27	2	6	12 27	2	51
13 28	1	24	13 28	2	9	13 28	2	54	13 28	3	39
14 29	2	12	14 29	2	57	14 29	3	42	14 29	4	27
15 30	3	0	15 30	3	45	15 30	4	30	15 30	5	15

## EXPLANATION OF THE TABLE.

To find the Time of High-Water, any Day, from the New to the Full, and from the Full to the New, Moon.

AT the Head of each Column, are the Points of the Compass, and the corresponding Hours and Minutes; beneath which is the Moon's Age, in two Rows, the first from New to Full, or 1 to 15 Days, the other from Full to New, or from 16 to 30 Days, against which, stand the Hours and Minutes, or the Time of High-Water for each respective Place in the preceding Table.



## A Table of the Time of High-Water.

E and W			6	0	EbS and WbN			6	45	ESE and WNW			7	30	SEbE and NWbW			8	15
Moon's Age.			Hrs.	Min.	Moon's Age.			Hrs.	Min.	Moon's Age.			Hrs.	Min.	Moon's Age.			Hrs.	Min.
1	and	16	6	48	1	and	16	7	33	1	and	16	8	18	1	and	16	9	3
2		17	7	36	2		17	8	21	2		17	9	6	2		17	9	51
3		18	8	24	3		18	9	9	3		18	9	54	3		18	10	39
4		19	9	12	4		19	9	57	4		19	10	42	4		19	11	27
5		20	10	0	5		20	10	45	5		20	11	30	5		20	12	15
6		21	10	48	6		21	11	33	6		21	12	18	6		21	1	3
7		22	11	36	7		22	12	21	7		22	1	6	7		22	1	51
8		23	12	24	8		23	1	9	8		23	1	54	8		23	2	39
9		24	1	12	9		24	1	57	9		24	2	42	9		24	3	27
10		25	2	0	10		25	2	45	10		25	3	30	10		25	4	15
11		26	2	48	11		26	3	33	11		26	4	18	11		26	5	3
12		27	3	36	12		27	4	21	12		27	5	6	12		27	5	51
13		28	4	24	13		28	5	9	13		28	5	54	13		28	6	39
14		29	5	12	14		29	5	57	14		29	6	42	14		29	7	27
15		30	6	0	15		30	6	45	15		30	7	30	15		30	8	15

## E X P L A N A T I O N.

Required the Time of High-Water at *Ostend*, July 23, 1789.

Find the Moon's Age, as before taught, which is 1 Day. Look for *Ostend* in the TIDE-TABLE, where you will find N and S. also 12 H. 0 Min. Then seek in this Table N and S, or 12 H. 0 Min. under which, against the Moon's Age 1, you will find 48 Minutes past 12 o'Clock, the Time of High-Water at *Ostend* in the Afternoon.

Required the Time of High-Water at *Rouen*, Sept. 20, 1788.

The Moon's Age, found as before taught, will be 20 Days. Look for *Rouen* in the TIDE-TABLE, you will find NEbN and SWbS. also 2 H. 15 Min. under which, in these Tables, against 20, the Moon's Age, is 6 H. 15 Min. or 15 Minutes past 6 o'Clock in the Afternoon.

*A Table of the Time of High-Water.*

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SE and NW	9	0	SEbS and NWbN	9	45	SSE and NNW	10	30	SbE and NbW	11	15
Moon's Age.	Hrs.	Min.	Moon's Age.	Hrs.	Min.	Moon's Age.	Hrs.	Min.	Moon's Age.	Hrs.	Min.
1 and 16	9	48	1 and 16	10	33	1 and 16	11	18	1 and 16	12	3
2 17	10	36	2 17	11	21	2 17	12	6	2 17	12	51
3 18	11	24	3 18	12	9	3 18	12	54	3 18	1	39
4 19	12	12	4 19	12	57	4 19	1	42	4 19	2	27
5 20	1	0	5 20	1	45	5 20	2	30	5 20	3	15
6 21	1	48	6 21	2	33	6 21	3	18	6 21	4	3
7 22	2	36	7 22	3	21	7 22	4	6	7 22	4	51
8 23	3	24	8 23	4	9	8 23	4	54	8 23	5	39
9 24	4	12	9 24	4	57	9 24	5	42	9 24	6	27
10 25	5	0	10 25	5	45	10 25	6	30	10 25	7	15
11 26	5	48	11 26	6	33	11 26	7	18	11 26	8	3
12 27	6	36	12 27	7	21	12 27	8	6	12 27	8	51
13 28	7	24	13 28	8	9	13 28	8	54	13 28	9	39
14 29	8	12	14 29	8	57	14 29	9	42	14 29	10	27
15 30	9	0	15 30	9	45	15 30	10	30	15 30	11	15

E X P L A N A T I O N.

Required the Time of High-Water at *Orfordness*, August 5, 1789.

The Moon's Age will be 14 Days, and a SEbS and NWbN Moon makes full Sea at 9 H. 45 Min. off *Orfordness*; then, in these Tables, under SEbS and NWbN against 14, you have 57 Minutes after 8 o'Clock in the Morning, the Time of High-Water there.

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